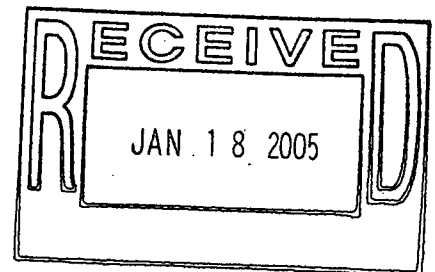


**Closeout Report  
for IHSS Group 400-7**

**UBC 442, IHSS 400-129,  
IHSS 400-157.1, and IHSS 400-187**

Approval received from the Colorado Department of Public Health and Environment  
January 10, 2005.      IA-7521

Approval letter contained in the Administrative Record.



**December 2004**

**ADMIN RECORD**

IA-A-002524

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## ENCLOSURE

Compact Disc Containing Standardized Real and Quality Control Acceleration Action Data

## ACRONYMS

AAESE	Accelerated Action Ecological Screening Evaluation
AL	action level
AR	Administrative Record
bgs	below ground surface
CAS	Chemical Abstracts Service
CD	compact disc
CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	contaminant of concern
CRA	Comprehensive Risk Assessment
cu ft	cubic feet
cu yd	cubic yard
DOE	U.S. Department of Energy
DQA	Data Quality Assessment
DQO	data quality objective
EPA	U.S. Environmental Protection Agency
ER	Environmental Restoration
ER RSOP	Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation
ft	foot
FY	Fiscal Year
HPGe	high-purity germanium
HRR	Historical Release Report
IA	Industrial Area
IASAP	Industrial Area Sampling and Analysis Plan
IHSS	Individual Hazardous Substance Site
K-H	Kaiser-Hill Company, L.L.C.
LCS	laboratory control sample
LLMW	low-level radioactive mixed waste
LLW	low-level radioactive waste
MDL	method detection limit
µg/kg	micrograms per kilogram (may also be found as ug/kg)
µg/L	micrograms per liter (may also be found as ug/L)
mg/kg	milligrams per kilogram
MS	matrix spike
MSD	matrix spike duplicate
NA	not applicable
NFAA	No Further Accelerated Action
NLR	No Longer Representative
NPWL	New Process Waste Lines
OU	Operable Unit
PAH	polycyclic aromatic hydrocarbon
PARCCS	precision, accuracy, representativeness, completeness, comparability and sensitivity
PCB	polychlorinated biphenyl

pCi/g	picocuries per gram
QC	quality control
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS or Site	Rocky Flats Environmental Technology Site
RFI/RI	RCRA Facility Investigation/Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
RL	reporting limit
RPD	relative percent difference
RSOP	RFCA Standard Operating Protocol
SAP	Sampling and Analysis Plan
SBD	sample beginning depth
SED	sample ending depth
Site	Rocky Flats Environmental Technology Site
SOR	sum of ratios
SSRS	Subsurface Soil Risk Screen
SVOC	semivolatile organic compound
SWD	Soil Water Database
TPH	total petroleum hydrocarbon
UBC	Under Building Contamination
UST	underground storage tank
V&V	verification and validation
VOC	volatile organic compound
WRW	wildlife refuge worker

## **EXECUTIVE SUMMARY**

This Closeout Report summarizes accelerated action activities conducted at Individual Hazardous Substance Site (IHSS) Group 400-7, located at the Rocky Flats Environmental Technology Site (RFETS or Site). Activities were planned and executed in accordance with the Industrial Area (IA) Sampling and Analysis Plan (IASAP), IASAP Addendum #IA-02-05, and the Environmental Restoration (ER) Rocky Flats Cleanup Agreement (RFCA) Standard Operating Protocol for Routine Soil Remediation (ER RSOP). Notification of the planned characterization and removal activities was provided in ER RSOP Notification #02-06.

Activities were conducted between June 2002 and October 2004, and included the following:

- Characterization of the 442 Under Building Contamination (UBC) Site and IHSSs within the Group during 2002, 2003, and 2004;
- Removal of the Building 442 and 452 slabs and other building structural features, including footer walls, footers, two sumps, one scale pit, waste lines, and asphalt around the slabs during 2002;
- Removal of surface soil with high concentrations of polycyclic aromatic hydrocarbons (PAHs) during 2002;
- Removal of the four Building 443 underground fuel oil storage tanks and the oil-contaminated soil in the vicinity (approximately 13,000 cubic yards) during 2004; and
- Removal of miscellaneous items encountered while removing the fuel oil storage tanks and oil-contaminated soil, including asphalt, New Process Waste Lines (NPWL) and associated valve vaults, steam and water lines, sanitary and storm drains, two underground emergency generator diesel storage tanks and associated fuel lines, and asbestos insulation.

The remaining ends of NPWL and sewer lines were grouted, and the remaining ends of water lines were capped. All excavated areas were backfilled and re-graded. Approximately 15,000 cubic yards of clean dirt was brought to the project area to backfill the 2004 excavation and achieve final grade for the area. The area will be seeded, and hydromulch will be applied to conserve moisture and prevent seed erosion.

Characterization data indicate contaminant concentrations in surface and subsurface soil were less than RFCA wildlife refuge worker (WRW) action levels (ALs) at 80 of the 91 characterization sampling locations. Nine locations, at various depths, had concentrations that exceeded the total petroleum hydrocarbon standard of 5,000 micrograms per kilogram ( $\mu\text{g/kg}$ ). Two other locations had PAH concentrations that exceeded WRW ALs. Based on these results, contaminated soil was removed (as indicated above), and confirmation samples were collected. The confirmation sampling data indicate all contaminant concentrations are less than their respective ALs. Results of the Data Quality Assessment confirm that the data collected and used are adequate for decision making.

Removal activities were consistent with and contributed to the ER RSOP overall long-term remedial action objectives for RFETS soil. The removal of contaminated building concrete, waste lines, fuel tanks, contaminated soil, and asbestos-containing material contributed to the protection of human health and the environment, because potential sources of contamination were removed. These actions also minimized the need for long-term maintenance and institutional or engineering controls. Best management practices were used to prevent the spread of contamination.

No IHSS Group-specific, near-term management techniques are required because of environmental conditions. Excavation within the IHSS Group will continue to be controlled through the Site Soil Disturbance Permit process. Site access and security controls and the Soil Disturbance Permit process will remain in place pending implementation of long-term controls.

The presence of residual radionuclides, metals, volatile organic compounds, and semivolatile organic compounds in soil will be evaluated in the Sitewide Comprehensive Risk Assessment (CRA), which is part of the Remedial Investigation/Feasibility Study (RI/FS) that will be conducted for the Site. Potential ecological risk will be evaluated in the Accelerated Action Ecological Screening Evaluation and the ecological risk assessment portion of the CRA. The need for and extent of any more general, long-term stewardship activities will also be evaluated in the RI/FS and proposed as part of the preferred alternative in the Proposed Plan for the Site. Institutional controls and other long-term stewardship requirements for the Site will ultimately be contained in the Corrective Action Decision/Record of Decision.

No long-term stewardship activities are recommended for IHSS Group 400-7 beyond the generally applicable Site requirements that may be imposed on this area in the future. Institutional controls that will be used as appropriate include prohibitions on construction of buildings in the IA, restrictions on excavation or other soil disturbance, and prohibitions on groundwater pumping in the area of the IHSS Group.

This Closeout Report and associated documentation will be retained as part of the Rocky Flats Administrative Record file. The specific long-term stewardship recommendations will also be summarized in the Rocky Flats Long-Term Stewardship Strategy.

Approval of this Closeout Report constitutes regulatory agency concurrence that this IHSS Group is a No Further Accelerated Action (NFAA) site. An NFAA decision is justified based on the following:

- Soil characterization and confirmation data;
- Results of the Subsurface Soil Risk Screen; and
- The stewardship evaluation.

This information and NFAA determination will be documented in the Fiscal Year 2005 Historical Release Report.

## **1.0 INTRODUCTION**

This Closeout Report summarizes characterization and accelerated action activities conducted at Individual Hazardous Substance Site (IHSS) Group 400-7 at the Rocky Flats Environmental Technology Site (RFETS or Site) in Golden, Colorado. IHSS Group 400-7 consists of the following IHSSs and Under Building Contamination (UBC) site:

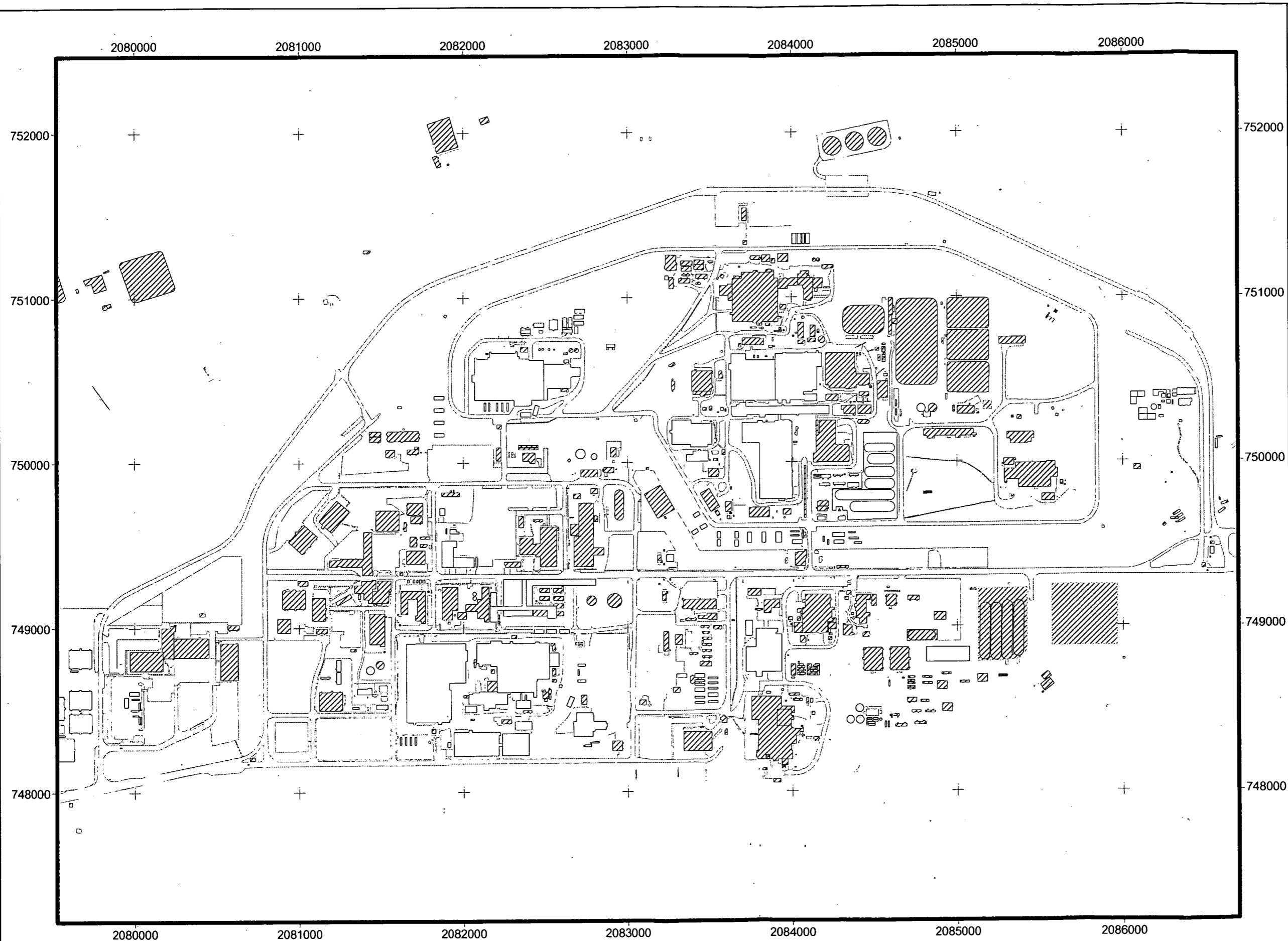
- UBC 442, Filter Test Facility;
- IHSS 400-129, Building 443 Oil Leak;
- IHSS 400-157.1, Radioactive Site North Area; and
- IHSS 400-187, Sulfuric Acid Spill Building 443.

The location of IHSS Group 400-7 is shown on Figure 1.

Accelerated action activities were planned and executed in accordance with the Industrial Area (IA) Sampling and Analysis Plan (SAP) (IASAP) (DOE 2001), IASAP Addendum #IA-02-05 (DOE 2002a), and Environmental Restoration (ER) Rocky Flats Cleanup Agreement (RFCA) Standard Operating Protocol (RSOP) for Routine Soil Remediation (ER RSOP) (DOE 2002b). Notification of the planned activities was provided in ER RSOP Notification #02-06 (DOE 2002c), which was approved by the Colorado Department of Public Health and Environment (CDPHE) on May 21, 2002 (CDPHE 2002).





This report contains the information necessary to demonstrate attainment of cleanup objectives and closure of IHSS Group 400-7, including:

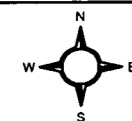
- Site characterization information
  - Description of site characterization activities, and
  - Site characterization data, including data tables and maps;
- Site accelerated action information
  - Description of the accelerated action,
  - Map of the actual remediation area, including dates and durations of specific remedial activities, and
  - Photographs documenting the accelerated action;
- Confirmation sampling data, including data tables and location maps, as well as a comparison of the confirmation data to applicable cleanup goals;
- Description of deviations from the ER RSOP;
- Description of the Subsurface Soil Risk Screen (SSRS);
- Description of near-term stewardship actions and long-term stewardship recommendations;



**Figure 1**  
**IHSS Group 400-7**  
**Location**

**KEY**

-  IHSS Group
-  Paved road
-  Demolished building
-  Standing building



200 0 200 400 600 Feet

Scale = 1:7,000

State Plane Coordinate Projection  
Colorado Central Zone  
Datum: NAD 27

U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Prepared by:

**RADMS**

Prepared for:



File: w:\projects\2004\400-7\400-7.apr

Date: 12/28/04

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- Disposition of wastes;
- Site reclamation;
- Table of No Longer Representative (NLR) sampling locations that have been remediated. These data will be used to mark database records so they are not used in the Sitewide Comprehensive Risk Assessment (CRA) or other Site analyses; and
- Data Quality Assessment (DQA), including comparison of confirmation data with project data quality objectives (DQOs).

Approval of this Closeout Report constitutes regulatory agency concurrence that this IHSS Group is a No Further Accelerated Action (NFAA) Site. This information and NFAA determination will be documented in the Fiscal Year (FY) 2005 (05) Historical Release Report (HRR).

## **2.0 SITE CHARACTERIZATION**

IHSS Group 400-7 characterization information consists of historical knowledge and analytical data. Historical information for the IHSS Group was derived from previous studies (DOE 1992-2003, 2000, 2001, 2002a) and is summarized in Sections 2.1 through 2.4. Analytical data for IHSS Group 400-7 (pre-accelerated action and accelerated action data) are summarized in Sections 2.5 and 2.6, respectively. A compact disc (CD) that contains the accelerated action data set, including real and quality control (QC) data, is enclosed with this report.

Accelerated action analytical data were collected in accordance with IASAP Addendum #IA-02-05 (DOE 2002a). Project sampling and analysis specifications, including media sampled, depth intervals, and analytes, are presented in Table 1. This includes characterization, in-process (during soil removal), and confirmation sampling and analysis. Deviations from the IASAP Addendum are also presented and explained in Table 1. A summary of all project sampling and analysis (characterization, in-process, and confirmation) is presented in Table 2.

### **2.1 UBC 442, Filter Test Facility**

Information on Building 442 is from the Historic American Engineering Record (DOE 1998) and HRRs (DOE 1992-2003). Building 442 was originally used to launder uranium-contaminated protective clothing from Building 444 and then later used to test and store high-efficiency particulate air (HEPA) filters and respirator cartridges. Radioactive sources were used in some of the test equipment.

Both radioactive and chemical materials from the laundry operations, including uranium, enriched uranium, and beryllium, potentially contaminated the soil beneath the building. Soil in the vicinity of this building has also been contaminated by radioactive release. In December 1963, rag-cleaning barrels leaked or spilled. Liquid drained into the ditch on the northwestern side of the building. In 1964, radioactively contaminated clothing from Building 883 infiltrated the laundry.

**Table 1**  
**IHSS Group 400-7 Sampling and Analysis Specifications and Deviations from the IASAP Addendum**

Location Code	Northing Planned	Easting Planned	Northing Actual	Easting Actual	Actual Media	Actual Depth Interval (ft)	Actual Analyte	Comments
452 N Transformer	NA	NA	749253.593	2082536.403	Subsurface Soil	4.0-4.5	Radionuclides Metals PCBs SVOC VOC	Biased location added to target transformer area.
aBX39-000	NA	NA	749245.006	2082301.789	Subsurface Soil	3.0-3.01	Radionuclides Metals SVOC VOC	Location added (biased); sample collected under the area where the sanitary line was located.
aBX39-001	NA	NA	749234.398	2082301.347	Subsurface Soil	3.0-3.01	Radionuclides Metals SVOC VOC	Location added (biased); sample collected under the area where the sanitary line was located.
aBX39-002	NA	NA	749229.738	2082304.916	Subsurface Soil	3.0-3.01	Radionuclides Metals SVOC VOC	Location added (biased); sample collected under the area where the sanitary line was located.
aBX39-003	NA	NA	749231.969	2082285.346	Subsurface Soil	3.0-3.01	Radionuclides Metals SVOC VOC	Location added (biased); sample collected under the area where the sanitary line was located.
aBX39-004	NA	NA	749234.447	2082273.061	Subsurface Soil	3.0-3.01	Radionuclides Metals SVOC VOC	Location added (biased); sample collected under the area where the sanitary line was located.
aBX39-005	NA	NA	749228.958	2082279.034	Subsurface Soil	3.0-3.01	Radionuclides Metals SVOC VOC	Location added (biased); sample collected under the area where the sanitary line was located.
aBX39-006	NA	NA	749192.672	2082279.218	Subsurface Soil	3.0-3.01	Radionuclides Metals SVOC VOC	Location added (biased); sample collected under the area where the sanitary line was located.

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Location Code	Northing Planned	Easting Planned	Northing Actual	Easting Actual	Actual Media	Actual Depth Interval (ft)	Actual Analyte	Comments
aBX39-007	NA	NA	749232.416	2082299.773	Subsurface Soil	3.0-3.01	Radionuclides Metals SVOC VOC	Location added (biased); sample collected under the area where the sanitary line was located.
BW38-009	NA	NA	749194.732	2082215.962	Subsurface Soil	3.0-3.3	Radionuclides Metals VOC	Confirmation location, biased location added to target NPWL.
BX38-000	749127.043	2082245.051	749140.261	2082252.815	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location changed to biased location to target NPWL; relocated 13.2 ft N and 7.8 ft E. Did not collect sample from D interval due to equipment refusal. No change in analytes.
BX38-001	749129.409	2082307.371	749129.421	2082307.310	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. Did not collect sample from D interval due to equipment refusal. No change in analytes.
BX38-002	749089.177	2082247.417	749084.873	2082248.518	Surface Soil Subsurface Soil	0.0-0.5 0.5-1.0	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; relocated 4 ft S due to steam lines in the area. Equipment refusal occurred prior to 2.5 ft. No change in analytes.
BX38-003	749145.187	2082276.605	749145.208	2082276.584	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth interval or analytes.
BX38-004	749109.688	2082277.394	749094.772	2082388.957	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; changed to biased location; relocated 15 ft S and 112 ft E to avoid utilities and improve sampling coverage of IHSS. No change in depth intervals or analytes.
BX38-005	749073.400	2082278.972	749145.643	2082275.820	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; changed to biased location; relocated 72 ft N and 3 ft W to avoid tank and utilities and improve sampling coverage of IHSS. No change in depth intervals or analytes.
BX38-006	749093.122	2082309.737	749093.104	2082309.772	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.

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Closeout Report for IHSS Group 400-7

Location Code	Northing Planned	Easting Planned	Northing Actual	Easting Actual	Actual Media	Actual Depth Interval (ft)	Actual Analyte	Comments
BX38-007	749123.099	2082183.519	749069.640	2082195.703	Subsurface Soil	3.5-4.0 10.0-10.5 22.5-24.5	Radionuclides Metals (except K interval) SVOC (except M interval) TPH (M interval only) VOC (except C interval due to partial recovery)	Statistical location; changed to biased location; relocated 53 ft S and 12 ft E to avoid steam lines and fence and improve sampling coverage within southern portion of IHSS. Depth intervals altered to better determine nature and extent of contamination. Partial recovery in C and F intervals due to equipment refusal. Original location characterized via confirmation sampling after tanks and contaminated soil were removed.
BX38-008	749158.597	2082181.153	749081.192	2082164.267	Surface Soil Subsurface Soil	0.0-0.5 0.5-1.5 18.5-20.0	Radionuclides Metals TPH VOC (except A interval)	Statistical location; changed to biased location; relocated 77 ft S and 17 ft W to avoid steam lines and fence and improve sampling coverage within the southern portion of IHSS. Partial recovery in B and J intervals due to equipment refusal. Samples not analyzed for SVOCs; TPH is the major COC. Original location characterized via confirmation sampling after tanks and contaminated soil were removed.
BX38-009	749087.600	2082185.097	749087.398	2082185.084	Surface Soil Subsurface Soil	0.0-0.5 2.0-2.5 19.5-20.0	Radionuclides Metals TPH VOC (except A interval)	Statistical location; no significant change in location. Partial recovery in B and J intervals due to equipment refusal. Samples not analyzed for SVOCs; TPH is the major COC.
BX38-010	749050.523	2082185.097	749051.254	2082164.742	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5 18.5-20.5	Radionuclides Metals TPH VOC (except A interval)	Statistical location; relocated 20 ft W to avoid steam lines and fence and to improve sampling coverage within the southern portion of IHSS 129. No change in depths. Samples not analyzed for SVOCs; TPH is the major COC. Original location characterized via confirmation sampling after tanks and contaminated soil were removed.
BX38-011	749130.987	2082218.229	749130.966	2082218.219	Surface Soil Subsurface Soil	Intervals A-L minus J	Radionuclides TPH	Biased location to target Valve Vault 16; no significant change in location. Depth intervals added. Samples not analyzed for metals, SVOCs or VOCs; radionuclides and TPH are the major COCs.
BX38-012	2082197.719	749145.187	NA	NA	NA	NA	NA	Biased location to target IHSS 129 and tanks; samples not collected; location characterized via confirmation sampling after tanks and contaminated soil were removed.

Closeout Report for IHSS Group 400-7

Location Code	Northing Planned	Easting Planned	Northing Actual	Easting Actual	Actual Media	Actual Depth Interval (ft)	Actual Analyte	Comments
BX38-013	749145.187	2082181.153	749163.623	2082184.036	Subsurface Soil	7.8-8.0 13.9-14.0 18.5-20.5	Radionuclides (K interval only) TPH VOC (K interval only)	Biased location to target fuel oil tanks; relocated 18 ft N and 3 ft E to avoid steam lines and fence. Two shallower depth intervals were added and analyzed for TPH.
BX38-014	2082166.953	749145.976	749164.247	2082170.131	Subsurface Soil	3.7-4.0 11.7-12.0	TPH	Biased location to target fuel oil tanks; relocated 18 ft N and 3 ft E to avoid steam lines and fence. K interval not sampled; two shallower depth intervals were added. Analyzed samples only for TPH, which is the major COC.
BX38-015	749106.532	2082168.531	749142.147	2082175.998	Subsurface Soil	8.0-8.3 12.0-14.0 18.5-20.5	Radionuclides (K interval only) TPH VOC (K interval only)	Biased location to target fuel oil tanks; relocated 36 ft N and 7 ft E to avoid steam lines and fence. Shallower depth interval was added and analyzed for TPH.
BX38-016	749107.321	2082184.308	749142.962	2082187.854	Subsurface Soil	2.3-2.5 7.9-8.0 15.9-16.0 18.5-20.5	Radionuclides (K interval only) Metals (I interval only) TPH (except I interval) VOC (K interval only)	Biased location to target fuel oil tanks; relocated 36 ft N and 4 ft E to avoid steam lines and fence. Three shallower depth intervals were added. Sample from I interval analyzed for metals.
BX38-017	2082198.508	749106.532	NA	NA	NA	NA	NA	Biased location to target IHSS 129 and fuel oil tanks; samples not collected; location characterized via confirmation sampling after tanks and contaminated soil were removed.
BX38-018	749068.667	2082198.508	749107.465	2082192.755	Subsurface Soil	6.2-6.7 20.5-21.0	Radionuclides (K interval only) TPH VOC (K interval only)	Biased location to target IHSS 129; relocated 39 ft N and 6 ft W to avoid steam lines and fence. Added shallower interval. Deeper interval extended by one interval to determine extent of contamination; had only partial recovery.
BX38-019	749071.034	2082185.886	749120.898	2082184.921	Subsurface Soil	16.5-17.5	Radionuclides TPH VOC	Biased location to target IHSS 129; relocated 50 ft N and 1 ft W to avoid steam lines and fence. Collected sample from one interval shallower than planned due to equipment refusal; had only partial recovery.
BX38-020	749071.034	2082164.587	749118.375	2082169.741	Subsurface Soil	16.0-18.7	Radionuclides TPH VOC	Biased location to target IHSS 129; relocated 47 ft N and 5 ft E to avoid steam lines and fence. Collected sample from one interval shallower than planned due to equipment refusal.
BX38-038	NA	NA	749153.290	2082158.845	Surface Soil Subsurface Soil	Intervals A-L	Radionuclides (A only) TPH	Biased location added to target IHSS 129 to delineate TPH contamination.

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Closeout Report for IHSS Group 400-7

Location Code	Northing Planned	Easting Planned	Northing Actual	Easting Actual	Actual Media	Actual Depth Interval (ft)	Actual Analyte	Comments
BX38-039	NA	NA	749107.801	2082175.807	Surface Soil Subsurface Soil	Intervals A-H	Radionuclides (B only) TPH	Biased location added to target IHSS 129; to delineate TPH contamination.
BX38-040	NA	NA	749116.885	2082209.629	Surface Soil Subsurface Soil	Intervals A-D	Radionuclides (D only) TPH	Biased location added to target IHSS 129; to delineate TPH contamination.
BX38-041	NA	NA	749153.323	2082208.348	Surface Soil Subsurface Soil	Intervals A-L	Radionuclides (F only) TPH	Biased location added to target IHSS 129; to delineate TPH contamination.
BX38-042	NA	NA	749096.043	2082204.411	Surface Soil Subsurface Soil	Intervals A-L	Radionuclides (B only) TPH	Biased location added to target IHSS 129; to delineate TPH contamination.
BX38-043	NA	NA	749115.424	2082227.424	Surface Soil Subsurface Soil	Intervals A-G, I & J	TPH	Biased location added to target IHSS 129; to delineate TPH contamination. Had partial recovery at Intervals G and I.
BX38-044	NA	NA	749093.619	2082175.169	Surface Soil Subsurface Soil	Intervals A-L	TPH	Biased location added to target IHSS 129; to delineate TPH contamination. Partial recovery in I interval due to equipment refusal.
BX38-045	NA	NA	749116.424	2082239.069	Surface Soil Subsurface Soil	Intervals A-H	TPH	Biased location added to target IHSS 129; to delineate TPH contamination.
BX38-046	NA	NA	749122.157	2082306.395	Surface Soil Subsurface Soil	Intervals A-L	TPH	Biased location added to target IHSS 129; to delineate TPH contamination.
BX38-047	NA	NA	748990.377	2082215.805	Subsurface Soil	0.5-2.0	Radionuclides Metals VOC	Biased location added to target Valve Vault 17. Had partial recovery due to equipment refusal.
BX38-057	NA	NA	749131.037	2082262.706	Subsurface Soil	8.0-8.5	Radionuclides Metals TPH VOC	Biased location added to target bottom of NPWL excavation.
BX39-000	749161.753	2082243.473	749162.020	2082243.740	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.
BX39-001	749289.549	2082267.928	749289.214	2082268.789	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.
BX39-002	749253.261	2082270.294	749253.261	2082273.294	Subsurface Soil	0.5-2.5	VOC	Statistical location; no significant change in location. Did not collect sample from A interval or analyze samples for radionuclides, metals or SVOCs as planned.

Closeout Report for IHSS Group 400-7

Location Code	Northing Planned	Easting Planned	Northing Actual	Easting Actual	Actual Media	Actual Depth Interval (ft)	Actual Analyte	Comments
BX39-003	749216.973	2082272.661	749216.977	2082272.619	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.
BX39-004	749180.686	2082273.450	749181.380	2082273.959	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth interval or analytes.
BX39-005	749164.908	2082305.793	749165.001	2082306.059	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.
BX39-006	749201.196	2082304.215	749201.234	2082304.136	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.
BX39-007	749236.695	2082302.638	749232.416	2082299.773	Surface Soil Subsurface Soil	0.0-0.5 0.5-1.0	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; relocated 4 ft S and 3 ft W to avoid water line. Had partial recovery in B interval due to equipment refusal. No change in analytes.
BX39-008	749272.982	2082301.060	749272.980	2082301.060	Surface Soil Subsurface Soil	0.0-0.5 0.5-0.8	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. Had partial recovery in B interval due to equipment refusal. No change in analytes. Also used as a confirmation location.
BX39-009	749292.704	2082331.037	749292.111	2082331.118	Surface Soil Subsurface Soil	0.0-0.5 0.5-1.3	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. Had partial recovery in B interval due to equipment refusal. No change in analytes.
BX39-010	749256.416	2082333.403	749256.458	2082332.860	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.
BX39-011	749219.340	2082334.981	749219.394	2082334.963	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.

Closeout Report for IHSS Group 400-7

Location Code	Northing Planned	Easting Planned	Northing Actual	Easting Actual	Actual Media	Actual Depth Interval (ft)	Actual Analyte	Comments
BX39-012	749184.630	2082336.559	749184.480	2082336.647	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.
BX39-013	2082179.575	749194.885	NA	NA	NA	NA	NA	Statistical location to target IHSS 129 and tanks; not collected; area characterized by other sample locations in northern part of IHSS (see Fig. 7).
BX39-014	2082165.376	749183.841	NA	NA	NA	NA	NA	Biased location to target IHSS 129 and tanks; not collected; area characterized by other sample locations in northern part of IHSS (see Fig. 7).
BX39-015	2082179.575	749183.052	NA	NA	NA	NA	NA	Biased location to target IHSS 129 and tanks; not collected; area characterized by other sample locations in northern part of IHSS (see Fig. 7).
BX39-016	2082198.508	749182.263	NA	NA	NA	NA	NA	Biased location to target IHSS 129 and tanks; not collected; area characterized by other sample locations in northern part of IHSS (see Fig. 7).
BX39-017	749234.223	2082268.629	749183.380	2082199.570	Subsurface Soil	7.4-7.4	Radionuclides Metals	Biased location to target sanitary sewer; relocated 51 ft S and 69 ft W to sample adjacent to target. Depth adjusted to conform to actual depth of sewer line. No change in analytes.
BX39-018	2082240.616	749234.223	NA	NA	NA	NA	NA	Biased location to target sanitary sewer; sample not collected due to the presence of water and caving problems.
BX39-029	NA	NA	749183.305	2082179.741	Surface Soil Subsurface Soil	Intervals A-L	Radionuclides (G only) TPH	Biased location added to target IHSS 129; to delineate TPH contamination.
BX39-030	NA	NA	749219.778	2082369.670	Surface Soil Subsurface Soil	Intervals A-L	TPH	Biased location added to target IHSS 129; to delineate TPH contamination.
BY38-000	749131.776	2082369.691	749131.677	2082369.670	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in analytes. Did not collect sample from D interval due to equipment refusal.
BY38-001	749148.342	2082338.136	749148.541	2082338.099	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.

Closeout Report for IHSS Group 400-7

Location Code	Northing Planned	Easting Planned	Northing Actual	Easting Actual	Actual Media	Actual Depth Interval (ft)	Actual Analyte	Comments
BY38-002	749112.843	2082339.714	749109.548	2082339.740	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.
BY38-003	749076.556	2082341.292	749076.617	2082341.184	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.
BY38-004	749096.277	2082372.057	749096.235	2082372.028	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.
BY38-005	749079.711	2082402.823	749079.498	2082403.746	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.
BY38-006	749115.210	2082402.034	749115.403	2082402.004	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.
BY38-007	749152.286	2082401.245	749152.286	2082401.245	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.
BY38-008	749117.577	2082463.566	749097.750	2082482.857	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC	Statistical location; relocated 20 ft S and 19 ft E to better target IHSS 187. Added B interval. No change in analytes.
BY38-009	749122.310	2082526.675	749099.026	2082522.941	Subsurface Soil	0.5-2.5	Radionuclides Metals SVOC VOC	Statistical location; relocated 23 ft S and 4 ft W to better target IHSS 187. No change in analytes. B interval sampled instead of A interval.
BY38-010	749084.444	2082528.252	749077.510	2082523.893	Subsurface Soil	0.5-2.5	Radionuclides Metals SVOC VOC	Statistical location; relocated 7 ft S and 4 ft W to better target IHSS 187. No change in analytes. B interval sampled instead of A interval.

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Closeout Report for IHSS Group 400-7

Location Code	Northing Planned	Easting Planned	Northing Actual	Easting Actual	Actual Media	Actual Depth Interval (ft)	Actual Analyte	Comments
BY38-011	749130.987	2082410.712	749131.623	2082416.427	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5 4.5-6.5	Radionuclides Metals SVOC VOC (except A interval)	Biased location to target Valve Vault 20; relocated 1 ft N and 6 ft E to get adjacent to target. No change in depth intervals or analytes.
BY38-025	NA	NA	749076.617	2082368.798	Subsurface Soil	2.5-2.6	Radionuclides Metals VOC	Biased location added to target Valve Vault 16.
BY39-000	749168.064	2082368.902	749168.077	2082368.798	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.
BY39-001	749203.563	2082366.535	749203.618	2082366.949	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.
BY39-002	749239.061	2082364.958	749239.810	2082364.890	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.
BY39-003	749275.349	2082363.380	749275.404	2082363.414	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes. Also used as a confirmation location.
BY39-004	749186.996	2082398.879	749187.401	2082398.534	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.
BY39-005	749223.284	2082398.090	749223.286	2082398.066	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. No change in depth intervals or analytes.
BY39-006	749258.783	2082394.935	749259.269	2082395.199	Surface Soil Subsurface Soil	0.0-0.5 0.5-0.8	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. Had partial recovery in B interval due to equipment refusal. No change in analytes.

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Location Code	Northing Planned	Easting Planned	Northing Actual	Easting Actual	Actual Media	Actual Depth Interval (ft)	Actual Analyte	Comments
BY39-007	749278.505	2082425.700	749278.722	2082425.534	Surface Soil Subsurface Soil	0.0-0.5 0.5-1.5	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. Had partial recovery in B interval due to equipment refusal. No change in analytes.
BY39-008	749262.727	2082457.255	749262.227	2082457.451	Surface Soil Subsurface Soil	0.0-0.5 0.5-1.3	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. Had partial recovery in B interval due to equipment refusal. No change in analytes.
BY39-009	749282.449	2082488.020	749167.970	2082368.310	Surface Soil Subsurface Soil	0.0-0.5 0.5-1.3	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; too close to utility to sample; changed to biased location to target IHSS 129; relocated 114 ft S and 120 ft W. Had partial recovery in B interval due to equipment refusal. No change in analytes.
BY39-010	749265.094	2082519.575	749265.264	2082519.711	Surface Soil Subsurface Soil	0.0-0.5 0.5-0.67	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; no significant change in location. Had partial recovery in B interval due to equipment refusal. No change in analytes.
BZ38-000	749104.955	2082558.229	749086.603	2082553.622	Subsurface Soil	0.5-2.5	Radionuclides Metals SVOC VOC	Statistical location changed to biased location; relocated 18 ft S and 5 ft W to better target IHSS 187. No change in analytes. B interval sampled instead of A interval.
BZ38-001	749068.667	2082559.807	749071.128	2082553.045	Subsurface Soil	0.5-2.5	Radionuclides Metals SVOC VOC	Statistical location changed to biased location; relocated 2.5 ft N and 7 ft W to better target IHSS 187. No change in analytes. B interval sampled instead of A interval.
BZ39-000	749284.815	2082551.129	749258.728	2082548.286	Surface Soil Subsurface Soil	0.0-0.5 0.5-0.7	Radionuclides Metals SVOC VOC (except A interval)	Statistical location changed to biased location; relocated 26 ft S and 3 ft W to avoid water line and to target potential soil spoils from ditch cleaning. Had partial recovery in B interval due to equipment refusal. No change in analytes.
BZ39-001	749267.460	2082581.895	749257.286	2082581.652	Surface Soil Subsurface Soil	0.0-0.5 0.5-0.7	Radionuclides Metals SVOC VOC (except A interval)	Statistical location changed to biased location; relocated 10 ft S to avoid water line and to target potential soil spoils from ditch cleaning. Had partial recovery in B interval due to equipment refusal. No change in analytes.

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Location Code	Northing Planned	Easting Planned	Northing Actual	Easting Actual	Actual Media	Actual Depth Interval (ft)	Actual Analyte	Comments
BZ39-002	749287.971	2082612.661	749257.553	2082613.132	Surface Soil Subsurface Soil	0.0-0.5 0.5-0.8	Radionuclides Metals SVOC VOC (except A interval)	Statistical location changed to biased location; relocated 30 ft S to avoid water line and to target potential soil spoils from ditch cleaning. Had partial recovery in B interval due to equipment refusal. No change in analytes.
BZ39-003	749271.405	2082643.426	749257.365	2082642.644	Surface Soil Subsurface Soil	0.0-0.5 0.5-0.8	Radionuclides Metals SVOC VOC (except A interval)	Statistical location changed to biased location; relocated 14 ft S and 1 ft W to avoid water line and to target potential soil spoils from ditch cleaning. Had partial recovery in B interval due to equipment refusal. No change in analytes.
BZ39-004	749291.126	2082674.192	749257.968	2082674.925	Surface Soil Subsurface Soil	0.0-0.5 0.5-0.6	Radionuclides Metals SVOC VOC (except A interval)	Statistical location changed to biased location; relocated 33 ft S and 1 ft E to avoid water line and to target potential soil spoils from ditch cleaning. Had partial recovery in B interval due to equipment refusal. No change in analytes.
BZ39-005	749274.560	2082706.535	749251.806	2082717.533	Surface Soil Subsurface Soil	0.0-0.5 0.5-0.6	Radionuclides Metals SVOC VOC (except A interval)	Statistical location; changed to biased location; relocated 23 ft S and 11 ft E to avoid water line and to target potential soil spoils from ditch cleaning. Had partial recovery in B interval due to equipment refusal. No change in analytes.
CA39-000	749276.138	2082768.855	749277.090	2082768.855	Surface Soil	0.0-0.3	Radionuclides Metals SVOC	Statistical location; no significant change in location. Had partial recovery in A interval due to equipment refusal; could not sample B interval. No change in analytes
East Wall	NA	NA	749191.301	2082301.873	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Biased location added near footer wall to target UBC 442.
West Wall	NA	NA	749191.764	2082271.261	Surface Soil Subsurface Soil	0.0-0.5 0.5-2.5	Radionuclides Metals SVOC VOC (except A interval)	Biased location added near footer wall to target UBC 442.
BW39-002	NA	NA	2082134.014	749168.667	Subsurface Soil	15.0-15.3	Metals SVOC TPH VOC	In-process sampling location north of tank excavation in mixing area where contaminated soil was blended with clean soil. Sample was field-screened but not sent for analysis.
BX38-055	NA	NA	749121.465	2082167.028	Subsurface Soil	12.0-12.5	TPH	In-process sampling location for southern side of tank excavation.

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Location Code	Northing Planned	Easting Planned	Northing Actual	Easting Actual	Actual Media	Actual Depth Interval (ft)	Actual Analyte	Comments
BX39-035	NA	NA	749189.786	2082172.897	Subsurface Soil	12.0-12.5	TPH	In-process sampling location at bottom of excavation between concrete tank supports.
BX39-036	NA	NA	749170.130	2082202.156	Subsurface Soil	12.0-12.5	TPH	In-process sampling location for eastern side of tank excavation.
BX39-037	NA	NA	749171.154	2082162.975	Subsurface Soil	12.0-12.5	TPH	In-process sampling location for western side of tank excavation.
BW39-003	NA	NA	749174.363	2082132.945	Subsurface Soil	16.0-16.2	Metals SVOC TPH VOC	Confirmation sampling location northern of tank excavation in mixing area where contaminated soil was blended with clean soil. Associated with in-process sampling location BW39-002.
BX38-056	NA	NA	749118.469	2082170.911	Subsurface Soil	16.0-16.2	Metals SVOC TPH VOC	Confirmation sampling location for southern side of tank excavation. Associated with in-process sampling location BX38-055.
BX39-038	NA	NA	749210.575	2082180.745	Subsurface Soil	12.0-12.5	TPH	Confirmation sampling location for northern side of tank excavation.
BX39-040	NA	NA	749170.043	2082158.709	Subsurface Soil	16.0-16.2	Metals SVOC TPH VOC	Confirmation sampling location for western side of tank excavation. Associated with in-process sampling location BX39-037.
BX39-041	NA	NA	749168.237	2082203.463	Subsurface Soil	16.0-16.2	Metals SVOC TPH VOC	Confirmation sampling location for eastern side of tank excavation. Associated with in-process sampling location BX39-036.
BX39-042	NA	NA	749187.642	2082173.667	Subsurface Soil	20.0-20.5	Metals SVOC TPH VOC	Confirmation sampling location at bottom of excavation between concrete tank supports. Associated with in-process sampling location BX39-035.
BY38-042	NA	NA	749120.192	2082207.938	Subsurface Soil	18.0-18.2	TPH	Confirmation sampling location in the East Plume, center of western trench.
BY38-043	NA	NA	749094.910	2082208.468	Subsurface Soil	8.0-8.2	TPH	Confirmation sampling location in the East Plume, southern side of western trench.
BY38-044	NA	NA	749119.416	2082284.063	Subsurface Soil	13.0-13.2	TPH	Confirmation sampling location in the East Plume, center of central trench.
BY38-045	NA	NA	749111.847	2082282.077	Subsurface Soil	8.0-8.2	TPH	Confirmation sampling location in the East Plume, southern side of central trench.
BY38-046	NA	NA	749116.218	2082214.558	Subsurface Soil	16.0-16.2	TPH	Confirmation sampling location in the East Plume, Valve Vault 16.

Location Code	Northing Planned	Easting Planned	Northing Actual	Easting Actual	Actual Media	Actual Depth Interval (ft)	Actual Analyte	Comments
BY38-047	NA	NA	749114.599	2082344.484	Subsurface Soil	6.0-6.2	TPH	Confirmation sampling location in the East Plume, center of eastern trench.
BY38-048	NA	NA	749111.977	2082345.323	Subsurface Soil	5.0-5.2	TPH	Confirmation sampling location in the East Plume, southern side of eastern trench.
BY38-049	NA	NA	749107.996	2082338.073	Subsurface Soil	7.0-7.2	TPH	Confirmation sampling location in the East Plume, western side of eastern trench.
BY39-011	NA	NA	749154.698	2082216.745	Subsurface Soil	8.0-8.2	TPH	Confirmation sampling location in the East Plume, northern side of western trench.
BY39-012	NA	NA	749123.690	2082285.659	Subsurface Soil	8.0-8.2	TPH	Confirmation sampling location in the East Plume, northern side of central trench.
BY39-013	NA	NA	749117.172	2082344.544	Subsurface Soil	5.0-5.2	TPH	Confirmation sampling location in the East Plume, northern side of eastern trench.
BY39-014	NA	NA	749140.937	2082252.121	Subsurface Soil	4.0-4.2	TPH	Confirmation sampling location at the center of the Spill Area.
BY39-015	NA	NA	749153.832	2082253.194	Subsurface Soil	2.0-2.2	TPH	Confirmation sampling location at the northern end of the Spill Area.
BY39-016	NA	NA	749146.422	2082277.078	Subsurface Soil	2.0-2.2	TPH	Confirmation sampling location at the eastern end of the Spill Area.

**Table 2**  
**IHSS Group 400-7 Sampling and Analysis Summary**

Category	Planned Total	Actual Total
Number of Sampling Locations	73	118
Number of Samples	136	295
Number of Radionuclide Analyses	136	151
Number of Metal Analyses	117	134
Number of Volatile Organic Compound (VOC) Analyses	75	88
Number of Semi-Volatile Organic Compound (SVOC) Analyses	104	121
Number of Polychlorinated Biphenyl (PCB) Analyses	0	1
Number of Total Petroleum Hydrocarbon (TPH) Analyses	25	176

## 2.2 IHSS 400-129, Building 443 Oil Leak

IHSS 400-129 was the southernmost of four fuel oil tanks located near Building 443 (Tank No. 4). All four tanks were oriented lengthwise east to west and were removed as part of this accelerated action. The top of the No. 4 carbon-steel tank was located approximately 2.5 feet (ft) below grade, and was 11 ft in diameter by 27 ft in length with a total storage capacity of 19,000 gallons. Five underground lines, consisting of a steam line, return condensation line, pump line (to pump fuel oil), return line (for fuel oil), and line connected to supply tanks, were connected to Tank No. 4. It was primarily used to store #6 fuel oil from 1967 to 1984; however, #2 diesel oil was also stored in the tank during the 1970s. It was also used to store a waste mixture of compressor oil and water from 1984 to 1986 and solvent for fuel oil spills from 1967 to 1986. Tank No. 4 use was discontinued in 1986 after evidence of potential leakage was discovered. The contents of the tank were removed, although sludge remained in the tank and lines until they were removed.

Spills of #6 fuel oil associated with the four oil tanks were reported in 1967, 1968 and 1977, and a possible leak was reported in 1986. The Closure Plan for Tank No. 4 indicates the tank was a potential source for leakage. The Closure Plan also indicates traces of 1,1,1-trichloroethane and methylene chloride were detected in area groundwater.

During previous investigations, soil samples were collected from borings drilled to help characterize the tank area for closure. The analytes for these samples included VOCs, base neutral acids (BNAs), and metals. Results indicated the presence of organics, including 1,1,1-trichloroethane, methylene chloride, benzene, toluene, ethylbenzene, and total xylenes, above detection limits. Metals detected included aluminum, arsenic, beryllium, calcium, cadmium, chromium, copper, iron, mercury, magnesium, nickel, potassium, lead, vanadium, and zinc.

High-purity germanium (HPGe) survey data collected during the Operable Unit (OU) 10 Phase I Resource Conservation and Recovery Act (RCRA) Facility Investigation/Remedial Investigation (RFI/RI) indicated activities of potassium-40 and thorium-232 exceeded background. These data are available in the IA Data Summary Report (DOE 2000).

## 2.3 IHSS 400-157.1, Radioactive Site North Area

Building 442 was used as a laundry facility to clean contaminated clothing. It was in use from 1953 until approximately 1972 when it was converted to a filter-testing laboratory.

As early as September 1953, contamination associated with the handling and steaming of contaminated rags was detected in the soil around the building. A special survey conducted on October 14, 1953, in the ditches north and west of Building 442 encountered maximum soil contamination to be 500,000 disintegrations per minute per kilogram. The Site Survey Annual Report for 1954 stated that soil sampling throughout the year had disclosed contamination 10 times background in the ditches near Building 442. Areas around Buildings 441 and 442 consistently showed significant contamination. In September 1959, a high count was detected on a smear sample from the Building 442 dock, and the area was decontaminated. In 1963, a barrel of cleaning rags containing solvents and radioactive metal shavings spilled, and liquid drained east into the ditch on the northwestern side of the building. Radioactivity was detected as far as the eastern end of Building 555. Surface radioactivity in the affected areas and around Building 442 was removed to background levels.

#### **2.4 IHSS 400-187, Sulfuric Acid Spill Building 443**

A sulfuric acid spill occurred on September 11, 1970, from an aboveground 3,000-gallon tank located approximately 30 ft east of Building 443. Approximately 1,500 gallons of acid spilled from the tank and drained eastward through a culvert under Fifth Street. The acid then flowed along a ditch south of Building 442 where it was captured in an earthen pit and neutralized with lime. Some of the acid also flowed northward along a north-south ditch east of Building 442. A dike was installed to stop the northward flow, and lime was used to neutralize the acid. No documentation was found that details the removal of contaminated soil; however, photographs indicate soil was excavated immediately adjacent to the tank.

The IHSS is located east of former Building 443 and extends into an area that was later occupied by Building 452. After the spill, much of the area was graded, and used for buildings, tanks, and sidewalks. HPGe survey data collected during the OU 12 Phase I RFI/RI indicated slightly anomalous uranium-238 values at several locations. Surface soil sample analysis indicated americium-241, gross beta, plutonium-239/240, radium-226, radium-228, uranium-238, and uranium-235 activities were above background values.

#### **2.5 Pre-Accelerated Action Characterization Data**

Pre-accelerated action characterization data are presented on Figure 2. Only data greater than background means plus two standard deviations (for radionuclides and metals) or method detection limits (MDLs) (for organic compounds) are presented. No soil activities or concentrations exceeded RFCA wildlife refuge worker (WRW) action levels (ALs). The purpose of these data was to help define potential contaminants of concern (PCOCs) and accelerated action sampling locations.

#### **2.6 Acceleration Action Characterization Data**

Accelerated action soil sampling was started during FY02, continued during FY03, and was completed during FY04 when IHSS 400-129 became available for sampling after the demolition of Building 443. Sampling locations and analytical results for IHSS Group 400-7 are presented on Figures 3 through 7 and in Table 3. Only results greater than background means plus two standard deviations or reporting limits (RLs) are shown.

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**Closeout Report for IHSS Group 400-7**  
**UBC 442, IHSS 400-129, IHSS 400-157.1, and**  
**IHSS 400-187**

**December 2004**

**Figure 2:**

**IHSS Group 400-7 Pre-Accelerated  
Action Soil Sampling Locations and  
Results**

**File: W:\Projects\Fy2004\400-7\400-7.apr**

**December 28, 2004**

**CERCLA Administrative Record Document, IA-A-002524**

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**Closeout Report for IHSS Group 400-7**  
**UBC 442, IHSS 400-129, IHSS 400-157.1, and**  
**IHSS 400-187**

**December 2004**

**Figure 3:**

**Surface Soil Characterization Results**  
**Greater than Background Means Plus**  
**Two Standard Deviations or RLs,**  
**Eastern Portion of IHSS Group 400-7**

**File: W:\Projects\Fy2004\400-7\400\_7\_postings\_111504.apr**

**December 28, 2004**

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**Closeout Report for IHSS Group 400-7**  
**UBC 442, IHSS 400-129, IHSS 400-157.1, and**  
**IHSS 400-187**

**December 2004**

**Figure 4:**

**Surface Soil Characterization Results**  
**Greater than Background Means Plus**  
**Two Standard Deviations or RLs,**  
**Western Portion of IHSS Group 400-7**

**File: W:\Projects\Fy2004\400-7\400\_7\_postings\_111504.apr**

**December 28, 2004**

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**Closeout Report for IHSS Group 400-7**  
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**IHSS 400-187**

**December 2004**

**Figure 5:**

**Subsurface Soil Characterization**  
**Results Greater than Background**  
**Means Plus Two Standard Deviations**  
**or RLs, Eastern Portion of IHSS**  
**Group 400-7**

**File: W:\Projects\Fy2004\400-7\400\_7\_postings\_111504.apr**

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**Closeout Report for IHSS Group 400-7**  
**UBC 442, IHSS 400-129, IHSS 400-157.1, and**  
**IHSS 400-187**

**December 2004**

**Figure 6:**

**Subsurface Soil Characterization**  
**Results Greater than Background**  
**Means Plus Two Standard Deviations**  
**or RLs, Western Portion of IHSS**  
**Group 400-7**

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**Closeout Report for IHSS Group 400-7**  
**UBC 442, IHSS 400-129, IHSS 400-157.1, and**  
**IHSS 400-187**

**December 2004**

**Figure 7:**

**IHSS Group 400-7 Soil TPH**  
**Concentrations Greater than RLs**

**File: W:\Projects\Fy2004\400-7\400\_7\_postings\_111504.apr**

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Table 3  
IHSS Group 400-7 Accelerated Action Soil Characterization Data

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRWAL	Unit
452 N. Transformer	749253.593	2082536.403	4.0	4.5	Arsenic	19.10	NA	13.14	22.2	mg/kg
452 N. Transformer	749253.593	2082536.403	4.0	4.5	Barium	688.00	NA	289.38	26400.0	mg/kg
452 N. Transformer	749253.593	2082536.403	4.0	4.5	Copper	312.00	NA	38.21	40900.0	mg/kg
452 N. Transformer	749253.593	2082536.403	4.0	4.5	Iron	53000.00	NA	41046.52	307000.0	mg/kg
452 N. Transformer	749253.593	2082536.403	4.0	4.5	Lead	25.30	NA	24.97	1000.0	mg/kg
452 N. Transformer	749253.593	2082536.403	4.0	4.5	Nickel	84.70	NA	62.21	20400.0	mg/kg
452 N. Transformer	749253.593	2082536.403	4.0	4.5	Pyrene	46.00	45.00	NA	22100000.0	ug/kg
452 N. Transformer	749253.593	2082536.403	4.0	4.5	Uranium-234	4.00	NA	2.64	300.0	pCi/g
452 N. Transformer	749253.593	2082536.403	4.0	4.5	Uranium-235	0.30	NA	0.12	8.0	pCi/g
452 N. Transformer	749253.593	2082536.403	4.0	4.5	Uranium-238	4.00	NA	1.49	351.0	pCi/g
452 N. Transformer	749253.593	2082536.403	4.0	4.5	Vanadium	170.00	NA	88.49	7150.0	mg/kg
452 N. Transformer	749253.593	2082536.403	4.0	4.5	Zinc	196.00	NA	139.10	307000.0	mg/kg
ABX39-000	749245.006	2082301.789	3.0	3.01	Anthracene	130.00	80.00	NA	204000000.0	ug/kg
ABX39-000	749245.006	2082301.789	3.0	3.01	Benzo(a)anthracene	400.00	40.00	NA	34900.0	ug/kg
ABX39-000	749245.006	2082301.789	3.0	3.01	Benzo(a)pyrene	350.00	97.00	NA	3490.0	ug/kg
ABX39-000	749245.006	2082301.789	3.0	3.01	Benzo(b)fluoranthene	300.00	100.00	NA	34900.0	ug/kg
ABX39-000	749245.006	2082301.789	3.0	3.01	Benzo(k)fluoranthene	350.00	96.00	NA	349000.0	ug/kg
ABX39-000	749245.006	2082301.789	3.0	3.01	bis(2-Ethylhexyl)phthalate	580.00	71.00	NA	1970000.0	ug/kg
ABX39-000	749245.006	2082301.789	3.0	3.01	Chrysene	460.00	55.00	NA	3490000.0	ug/kg
ABX39-000	749245.006	2082301.789	3.0	3.01	Dibenz(a,h)anthracene	92.00	48.00	NA	3490.0	ug/kg
ABX39-000	749245.006	2082301.789	3.0	3.01	Fluoranthene	850.00	86.00	NA	27200000.0	ug/kg
ABX39-000	749245.006	2082301.789	3.0	3.01	Indeno(1,2,3-cd)pyrene	220.00	49.00	NA	34900.0	ug/kg
ABX39-000	749245.006	2082301.789	3.0	3.01	Lead	66.50	NA	24.97	1000.0	mg/kg
ABX39-000	749245.006	2082301.789	3.0	3.01	Pyrene	740.00	41.00	NA	22100000.0	ug/kg
ABX39-001	749234.398	2082301.347	3.0	3.01	Benzo(a)anthracene	190.00	42.00	NA	34900.0	ug/kg
ABX39-001	749234.398	2082301.347	3.0	3.01	Benzo(a)pyrene	300.00	100.00	NA	3490.0	ug/kg
ABX39-001	749234.398	2082301.347	3.0	3.01	Benzo(b)fluoranthene	200.00	110.00	NA	34900.0	ug/kg

Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AL	Unit
ABX39-001	749234.398	2082301.347	3.0	3.01	Benzo(k)fluoranthene	230.00	99.00	NA	349000.0	ug/kg
ABX39-001	749234.398	2082301.347	3.0	3.01	bis(2-Ethylhexyl)phthalate	1400.00	74.00	NA	1970000.0	ug/kg
ABX39-001	749234.398	2082301.347	3.0	3.01	Butylbenzylphthalate	250.00	36.00	NA	147000000.0	ug/kg
ABX39-001	749234.398	2082301.347	3.0	3.01	Chrysene	250.00	57.00	NA	3490000.0	ug/kg
ABX39-001	749234.398	2082301.347	3.0	3.01	Dibenz(a,h)anthracene	83.00	50.00	NA	3490.0	ug/kg
ABX39-001	749234.398	2082301.347	3.0	3.01	Fluoranthene	280.00	89.00	NA	27200000.0	ug/kg
ABX39-001	749234.398	2082301.347	3.0	3.01	Indeno(1,2,3-cd)pyrene	220.00	51.00	NA	34900.0	ug/kg
ABX39-001	749234.398	2082301.347	3.0	3.01	Lead	79.30	NA	24.97	1000.0	mg/kg
ABX39-001	749234.398	2082301.347	3.0	3.01	Pyrene	270.00	43.00	NA	22100000.0	ug/kg
ABX39-001	749234.398	2082301.347	3.0	3.01	Uranium-234	3.42	NA	2.64	300.0	pCi/g
ABX39-001	749234.398	2082301.347	3.0	3.01	Uranium-235	0.22	NA	0.12	8.0	pCi/g
ABX39-001	749234.398	2082301.347	3.0	3.01	Uranium-238	3.42	NA	1.49	351.0	pCi/g
ABX39-002	749229.738	2082304.916	3.0	3.01	Benzo(a)anthracene	520.00	43.00	NA	34900.0	ug/kg
ABX39-002	749229.738	2082304.916	3.0	3.01	Benzo(a)pyrene	420.00	100.00	NA	3490.0	ug/kg
ABX39-002	749229.738	2082304.916	3.0	3.01	Benzo(b)fluoranthene	430.00	110.00	NA	34900.0	ug/kg
ABX39-002	749229.738	2082304.916	3.0	3.01	Benzo(k)fluoranthene	380.00	100.00	NA	349000.0	ug/kg
ABX39-002	749229.738	2082304.916	3.0	3.01	bis(2-Ethylhexyl)phthalate	48000.00	760.00	NA	1970000.0	ug/kg
ABX39-002	749229.738	2082304.916	3.0	3.01	Chrysene	580.00	58.00	NA	3490000.0	ug/kg
ABX39-002	749229.738	2082304.916	3.0	3.01	Dibenz(a,h)anthracene	110.00	52.00	NA	3490.0	ug/kg
ABX39-002	749229.738	2082304.916	3.0	3.01	Fluoranthene	1200.00	92.00	NA	27200000.0	ug/kg
ABX39-002	749229.738	2082304.916	3.0	3.01	Indeno(1,2,3-cd)pyrene	270.00	53.00	NA	34900.0	ug/kg
ABX39-002	749229.738	2082304.916	3.0	3.01	Lead	56.70	NA	24.97	1000.0	mg/kg
ABX39-002	749229.738	2082304.916	3.0	3.01	Pyrene	750.00	44.00	NA	22100000.0	ug/kg
ABX39-002	749229.738	2082304.916	3.0	3.01	Uranium-235	0.20	NA	0.12	8.0	pCi/g
ABX39-002	749229.738	2082304.916	3.0	3.01	Uranium-238	2.51	NA	1.49	351.0	pCi/g
ABX39-003	749231.969	2082285.346	3.0	3.01	Acetone	360.00	240.00	NA	102000000.0	ug/kg
ABX39-003	749231.969	2082285.346	3.0	3.01	Benzo(a)anthracene	88.00	40.00	NA	34900.0	ug/kg
ABX39-003	749231.969	2082285.346	3.0	3.01	Benzo(a)pyrene	160.00	97.00	NA	3490.0	ug/kg
ABX39-003	749231.969	2082285.346	3.0	3.01	Benzo(b)fluoranthene	130.00	100.00	NA	34900.0	ug/kg

Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AL	Unit
ABX39-003	749231.969	2082285.346	3.0	3.01	Benzo(k)fluoranthene	120.00	96.00	NA	349000.0	ug/kg
ABX39-003	749231.969	2082285.346	3.0	3.01	bis(2-Ethylhexyl)phthalate	270.00	71.00	NA	1970000.0	ug/kg
ABX39-003	749231.969	2082285.346	3.0	3.01	Chrysene	150.00	55.00	NA	3490000.0	ug/kg
ABX39-003	749231.969	2082285.346	3.0	3.01	Fluoranthene	150.00	87.00	NA	27200000.0	ug/kg
ABX39-003	749231.969	2082285.346	3.0	3.01	Indeno(1,2,3-cd)pyrene	140.00	50.00	NA	34900.0	ug/kg
ABX39-003	749231.969	2082285.346	3.0	3.01	Lead	488.00	NA	24.97	1000.0	mg/kg
ABX39-003	749231.969	2082285.346	3.0	3.01	Pyrene	120.00	41.00	NA	22100000.0	ug/kg
ABX39-003	749231.969	2082285.346	3.0	3.01	Uranium-235	0.14	NA	0.12	8.0	pCi/g
ABX39-004	749234.447	2082273.061	3.0	3.01	Benzo(a)anthracene	67.00	41.00	NA	34900.0	ug/kg
ABX39-004	749234.447	2082273.061	3.0	3.01	Benzo(a)pyrene	99.00	98.00	NA	3490.0	ug/kg
ABX39-004	749234.447	2082273.061	3.0	3.01	Chrysene	120.00	56.00	NA	3490000.0	ug/kg
ABX39-004	749234.447	2082273.061	3.0	3.01	Fluoranthene	91.00	88.00	NA	27200000.0	ug/kg
ABX39-004	749234.447	2082273.061	3.0	3.01	Indeno(1,2,3-cd)pyrene	57.00	50.00	NA	34900.0	ug/kg
ABX39-004	749234.447	2082273.061	3.0	3.01	Lead	110.00	NA	24.97	1000.0	mg/kg
ABX39-004	749234.447	2082273.061	3.0	3.01	Pyrene	82.00	42.00	NA	22100000.0	ug/kg
ABX39-004	749234.447	2082273.061	3.0	3.01	Uranium-235	0.17	NA	0.12	8.0	pCi/g
ABX39-004	749234.447	2082273.061	3.0	3.01	Uranium-238	1.99	NA	1.49	351.0	pCi/g
ABX39-005	749228.958	2082279.034	3.0	3.01	Uranium-238	1.83	NA	1.49	351.0	pCi/g
ABX39-006	749192.672	2082279.218	3.0	3.01	Benzo(a)anthracene	110.00	41.00	NA	34900.0	ug/kg
ABX39-006	749192.672	2082279.218	3.0	3.01	Benzo(a)pyrene	120.00	98.00	NA	3490.0	ug/kg
ABX39-006	749192.672	2082279.218	3.0	3.01	Chrysene	170.00	55.00	NA	3490000.0	ug/kg
ABX39-006	749192.672	2082279.218	3.0	3.01	Fluoranthene	290.00	88.00	NA	27200000.0	ug/kg
ABX39-006	749192.672	2082279.218	3.0	3.01	Indeno(1,2,3-cd)pyrene	63.00	50.00	NA	34900.0	ug/kg
ABX39-006	749192.672	2082279.218	3.0	3.01	Lead	25.10	NA	24.97	1000.0	mg/kg
ABX39-006	749192.672	2082279.218	3.0	3.01	Pyrene	200.00	42.00	NA	22100000.0	ug/kg
ABX39-006	749192.672	2082279.218	3.0	3.01	Uranium-235	0.17	NA	0.12	8.0	pCi/g
ABX39-007	749232.416	2082299.773	3.0	3.01	Benzo(a)anthracene	91.00	43.00	NA	34900.0	ug/kg
ABX39-007	749232.416	2082299.773	3.0	3.01	Chrysene	94.00	59.00	NA	3490000.0	ug/kg
ABX39-007	749232.416	2082299.773	3.0	3.01	Fluoranthene	170.00	93.00	NA	27200000.0	ug/kg

Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW All	Units
ABX39-007	749232.416	2082299.773	3.0	3.01	Lead	30.10	NA	24.97	1000.0	mg/kg
ABX39-007	749232.416	2082299.773	3.0	3.01	Pyrene	130.00	44.00	NA	22100000.0	ug/kg
ABX39-007	749232.416	2082299.773	3.0	3.01	Uranium-235	0.12	NA	0.12	8.0	pCi/g
BW38-009	749194.732	2082215.962	3.0	3.3	Acetone	6.80	4.60	NA	102000000.0	ug/kg
BX38-000	749140.261	2082252.815	0.0	0.5	Copper	32.80	NA	18.06	40900.0	mg/kg
BX38-000	749140.261	2082252.815	0.0	0.5	Iron	19300.00	NA	18037.00	307000.0	mg/kg
BX38-000	749140.261	2082252.815	0.0	0.5	Uranium-235	0.24	NA	0.09	8.0	pCi/g
BX38-000	749140.261	2082252.815	0.0	0.5	Vanadium	47.30	NA	45.59	7150.0	mg/kg
BX38-001	749129.421	2082307.310	0.0	0.5	Copper	32.30	NA	18.06	40900.0	mg/kg
BX38-001	749129.421	2082307.310	0.0	0.5	Iron	31400.00	NA	18037.00	307000.0	mg/kg
BX38-001	749129.421	2082307.310	0.0	0.5	Lithium	13.30	NA	11.55	20400.0	mg/kg
BX38-001	749129.421	2082307.310	0.0	0.5	Manganese	688.00	NA	365.08	3480.0	mg/kg
BX38-001	749129.421	2082307.310	0.0	0.5	Pyrene	69.00	40.00	NA	22100000.0	ug/kg
BX38-001	749129.421	2082307.310	0.0	0.5	Uranium-235	0.22	NA	0.09	8.0	pCi/g
BX38-001	749129.421	2082307.310	0.0	0.5	Vanadium	47.60	NA	45.59	7150.0	mg/kg
BX38-001	749129.421	2082307.310	0.5	2.5	Uranium-235	0.14	NA	0.12	8.0	pCi/g
BX38-002	749084.873	2082248.518	0.0	0.5	Aluminum	21000.00	NA	16902.00	228000.0	mg/kg
BX38-002	749084.873	2082248.518	0.0	0.5	Benzo(a)anthracene	95.00	41.00	NA	34900.0	ug/kg
BX38-002	749084.873	2082248.518	0.0	0.5	Benzo(a)pyrene	110.00	53.00	NA	3490.0	ug/kg
BX38-002	749084.873	2082248.518	0.0	0.5	Benzo(b)fluoranthene	98.00	66.00	NA	34900.0	ug/kg
BX38-002	749084.873	2082248.518	0.0	0.5	Benzo(k)fluoranthene	100.00	71.00	NA	349000.0	ug/kg
BX38-002	749084.873	2082248.518	0.0	0.5	Beryllium	0.98	NA	0.97	921.0	mg/kg
BX38-002	749084.873	2082248.518	0.0	0.5	Chromium	21.00	NA	16.99	268.0	mg/kg
BX38-002	749084.873	2082248.518	0.0	0.5	Chrysene	120.00	36.00	NA	3490000.0	ug/kg
BX38-002	749084.873	2082248.518	0.0	0.5	Fluoranthene	140.00	41.00	NA	27200000.0	ug/kg
BX38-002	749084.873	2082248.518	0.0	0.5	Indeno(1,2,3-cd)pyrene	70.00	46.00	NA	34900.0	ug/kg
BX38-002	749084.873	2082248.518	0.0	0.5	Lithium	15.00	NA	11.55	20400.0	mg/kg
BX38-002	749084.873	2082248.518	0.0	0.5	Nickel	18.00	NA	14.91	20400.0	mg/kg
BX38-002	749084.873	2082248.518	0.0	0.5	Pyrene	220.00	59.00	NA	22100000.0	ug/kg

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRWAL	Unit
BX38-002	749084.873	2082248.518	0.0	0.5	Vanadium	49.00	NA	45.59	7150.0	mg/kg
BX38-002	749084.873	2082248.518	0.5	1.0	Benzo(a)anthracene	67.00	43.00	NA	34900.0	ug/kg
BX38-002	749084.873	2082248.518	0.5	1.0	Chrysene	70.00	37.00	NA	3490000.0	ug/kg
BX38-003	749145.208	2082276.584	0.0	0.5	Antimony	0.63	NA	0.47	409.0	mg/kg
BX38-003	749145.208	2082276.584	0.0	0.5	Cobalt	11.20	NA	10.91	1550.0	mg/kg
BX38-003	749145.208	2082276.584	0.0	0.5	Copper	61.30	NA	18.06	40900.0	mg/kg
BX38-003	749145.208	2082276.584	0.0	0.5	Iron	33200.00	NA	18037.00	307000.0	mg/kg
BX38-003	749145.208	2082276.584	0.0	0.5	Manganese	505.00	NA	365.08	3480.0	mg/kg
BX38-003	749145.208	2082276.584	0.0	0.5	Nickel	17.70	NA	14.91	20400.0	mg/kg
BX38-003	749145.208	2082276.584	0.0	0.5	Strontium	99.10	NA	48.94	613000.0	mg/kg
BX38-003	749145.208	2082276.584	0.0	0.5	Uranium-235	0.19	NA	0.09	8.0	pCi/g
BX38-003	749145.208	2082276.584	0.0	0.5	Vanadium	83.70	NA	45.59	7150.0	mg/kg
BX38-003	749145.208	2082276.584	0.5	2.5	Acetone	5.80	4.80	NA	102000000.0	ug/kg
BX38-003	749145.208	2082276.584	0.5	2.5	Uranium-235	0.16	NA	0.12	8.0	pCi/g
BX38-004	749094.772	2082388.957	0.0	0.5	Aluminum	17100.00	NA	16902.00	228000.0	mg/kg
BX38-004	749094.772	2082388.957	0.0	0.5	Antimony	0.49	NA	0.47	409.0	mg/kg
BX38-004	749094.772	2082388.957	0.0	0.5	Uranium-234	5.01	NA	2.25	300.0	pCi/g
BX38-004	749094.772	2082388.957	0.0	0.5	Uranium-235	0.23	NA	0.09	8.0	pCi/g
BX38-004	749094.772	2082388.957	0.0	0.5	Uranium-238	5.01	NA	2.00	351.0	pCi/g
BX38-004	749094.772	2082388.957	0.5	2.5	Uranium-234	4.00	NA	2.64	300.0	pCi/g
BX38-004	749094.772	2082388.957	0.5	2.5	Uranium-238	4.00	NA	1.49	351.0	pCi/g
BX38-005	749145.643	2082275.820	0.0	0.5	Iron	19700.00	NA	18037.00	307000.0	mg/kg
BX38-005	749145.643	2082275.820	0.0	0.5	Lithium	15.30	NA	11.55	20400.0	mg/kg
BX38-005	749145.643	2082275.820	0.0	0.5	Uranium-235	0.30	NA	0.09	8.0	pCi/g
BX38-005	749145.643	2082275.820	0.0	0.5	Uranium-238	2.21	NA	2.00	351.0	pCi/g
BX38-005	749145.643	2082275.820	0.5	2.5	Uranium-234	3.00	NA	2.64	300.0	pCi/g
BX38-005	749145.643	2082275.820	0.5	2.5	Uranium-235	0.20	NA	0.12	8.0	pCi/g
BX38-005	749145.643	2082275.820	0.5	2.5	Uranium-238	3.00	NA	1.49	351.0	pCi/g
BX38-006	749093.104	2082309.772	0.0	0.5	2-Methylnaphthalene	190.00	61.00	NA	20400000.0	ug/kg

Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RI	Background	WRWAL	Unit
BX38-006	749093.104	2082309.772	0.0	0.5	Acenaphthene	660.00	48.00	NA	40800000.0	ug/kg
BX38-006	749093.104	2082309.772	0.0	0.5	Anthracene	710.00	81.00	NA	204000000.0	ug/kg
BX38-006	749093.104	2082309.772	0.0	0.5	Benzo(a)anthracene	770.00	41.00	NA	34900.0	ug/kg
BX38-006	749093.104	2082309.772	0.0	0.5	Benzo(a)pyrene	790.00	98.00	NA	3490.0	ug/kg
BX38-006	749093.104	2082309.772	0.0	0.5	Benzo(b)fluoranthene	610.00	100.00	NA	34900.0	ug/kg
BX38-006	749093.104	2082309.772	0.0	0.5	Benzo(k)fluoranthene	580.00	97.00	NA	349000.0	ug/kg
BX38-006	749093.104	2082309.772	0.0	0.5	Chrysene	790.00	55.00	NA	3490000.0	ug/kg
BX38-006	749093.104	2082309.772	0.0	0.5	Dibenz(a,h)anthracene	140.00	49.00	NA	3490.0	ug/kg
BX38-006	749093.104	2082309.772	0.0	0.5	Dibenzofuran	330.00	85.00	NA	2950000.0	ug/kg
BX38-006	749093.104	2082309.772	0.0	0.5	Fluoranthene	2200.00	88.00	NA	27200000.0	ug/kg
BX38-006	749093.104	2082309.772	0.0	0.5	Fluorene	580.00	79.00	NA	40800000.0	ug/kg
BX38-006	749093.104	2082309.772	0.0	0.5	Indeno(1,2,3-cd)pyrene	470.00	50.00	NA	34900.0	ug/kg
BX38-006	749093.104	2082309.772	0.0	0.5	Naphthalene	610.00	73.00	NA	3090000.0	ug/kg
BX38-006	749093.104	2082309.772	0.0	0.5	Pyrene	2100.00	42.00	NA	22100000.0	ug/kg
BX38-006	749093.104	2082309.772	0.0	0.5	Uranium-235	0.15	NA	0.09	8.0	pCi/g
BX38-006	749093.104	2082309.772	0.0	0.5	Zinc	104.00	NA	73.76	307000.0	mg/kg
BX38-006	749093.104	2082309.772	0.5	2.5	Aluminum	50600.00	NA	35373.17	228000.0	mg/kg
BX38-006	749093.104	2082309.772	0.5	2.5	Methylene chloride	1.60	0.94	NA	2530000.0	ug/kg
BX38-006	749093.104	2082309.772	0.5	2.5	Uranium-235	0.14	NA	0.12	8.0	pCi/g
BX38-006	749093.104	2082309.772	0.5	2.5	Uranium-238	1.75	NA	1.49	351.0	pCi/g
BX38-007	749069.640	2082195.703	10.0	10.5	Methylene chloride	1.40	0.88	NA	2530000.0	ug/kg
BX38-007	749069.640	2082195.703	22.5	24.5	Methylene chloride	1.60	0.92	NA	2530000.0	ug/kg
BX38-007	749069.640	2082195.703	22.5	24.5	TPH	4.20	3.60	NA	5000.0	mg/kg
BX38-007	749069.640	2082195.703	22.5	24.5	Uranium-235	0.12	NA	0.12	8.0	pCi/g
BX38-007	749069.640	2082195.703	22.5	24.5	Uranium-238	1.73	NA	1.49	351.0	pCi/g
BX38-008	749081.192	2082164.267	0.0	0.5	Aluminum	22000.00	NA	16902.00	228000.0	mg/kg
BX38-008	749081.192	2082164.267	0.0	0.5	Chromium	19.00	NA	16.99	268.0	mg/kg
BX38-008	749081.192	2082164.267	0.0	0.5	Lithium	15.00	NA	11.55	20400.0	mg/kg
BX38-008	749081.192	2082164.267	0.0	0.5	Nickel	17.00	NA	14.91	20400.0	mg/kg

Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AL	Unit
BX38-008	749081.192	2082164.267	0.0	0.5	TPH	54.80	4.20	NA	5000.0	mg/kg
BX38-008	749081.192	2082164.267	0.5	1.5	Methylene chloride	1.60	0.95	NA	2530000.0	ug/kg
BX38-008	749081.192	2082164.267	0.5	1.5	TPH	12.50	3.70	NA	5000.0	mg/kg
BX38-008	749081.192	2082164.267	18.5	20.0	Methylene chloride	1.60	0.98	NA	2530000.0	ug/kg
BX38-008	749081.192	2082164.267	18.5	20.0	TPH	22.10	4.10	NA	5000.0	mg/kg
BX38-009	749087.398	2082185.084	0.0	0.5	Aluminum	20000.00	NA	16902.00	228000.0	mg/kg
BX38-009	749087.398	2082185.084	0.0	0.5	Chromium	20.00	NA	16.99	268.0	mg/kg
BX38-009	749087.398	2082185.084	0.0	0.5	Iron	20000.00	NA	18037.00	307000.0	mg/kg
BX38-009	749087.398	2082185.084	0.0	0.5	Lithium	12.00	NA	11.55	20400.0	mg/kg
BX38-009	749087.398	2082185.084	0.0	0.5	Nickel	16.00	NA	14.91	20400.0	mg/kg
BX38-009	749087.398	2082185.084	0.0	0.5	TPH	343.00	7.40	NA	5000.0	mg/kg
BX38-009	749087.398	2082185.084	0.0	0.5	Uranium-234	3.48	NA	2.25	300.0	pCi/g
BX38-009	749087.398	2082185.084	0.0	0.5	Uranium-235	0.19	NA	0.09	8.0	pCi/g
BX38-009	749087.398	2082185.084	0.0	0.5	Uranium-238	3.48	NA	2.00	351.0	pCi/g
BX38-009	749087.398	2082185.084	2.0	2.5	Aluminum	36000.00	NA	35373.17	228000.0	mg/kg
BX38-009	749087.398	2082185.084	2.0	2.5	Methylene chloride	1.30	0.90	NA	2530000.0	ug/kg
BX38-009	749087.398	2082185.084	2.0	2.5	TPH	8.00	3.70	NA	5000.0	mg/kg
BX38-009	749087.398	2082185.084	2.0	2.5	Uranium-235	0.14	NA	0.12	8.0	pCi/g
BX38-009	749087.398	2082185.084	2.0	2.5	Uranium-238	2.56	NA	1.49	351.0	pCi/g
BX38-009	749087.398	2082185.084	19.5	20.0	Methylene chloride	1.10	0.95	NA	2530000.0	ug/kg
BX38-009	749087.398	2082185.084	19.5	20.0	TPH	20.50	4.00	NA	5000.0	mg/kg
BX38-009	749087.398	2082185.084	19.5	20.0	Uranium-235	0.15	NA	0.12	8.0	pCi/g
BX38-009	749087.398	2082185.084	19.5	20.0	Uranium-238	2.36	NA	1.49	351.0	pCi/g
BX38-010	749051.254	2082164.742	0.0	0.5	Aluminum	24000.00	NA	16902.00	228000.0	mg/kg
BX38-010	749051.254	2082164.742	0.0	0.5	Beryllium	1.00	NA	0.97	921.0	mg/kg
BX38-010	749051.254	2082164.742	0.0	0.5	Chromium	25.00	NA	16.99	268.0	mg/kg
BX38-010	749051.254	2082164.742	0.0	0.5	Lithium	16.00	NA	11.55	20400.0	mg/kg
BX38-010	749051.254	2082164.742	0.0	0.5	Mercury	0.15	NA	0.13	25200.0	mg/kg
BX38-010	749051.254	2082164.742	0.0	0.5	Nickel	22.00	NA	14.91	20400.0	mg/kg

Closeout Report for IHSS Group 400-7

Location Code	Northing	Eastng	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AL	Unit
BX38-010	749051.254	2082164.742	0.0	0.5	TPH	95.80	3.70	NA	5000.0	mg/kg
BX38-010	749051.254	2082164.742	0.0	0.5	Uranium-235	0.14	NA	0.09	8.0	pCi/g
BX38-010	749051.254	2082164.742	0.0	0.5	Vanadium	47.00	NA	45.59	7150.0	mg/kg
BX38-010	749051.254	2082164.742	0.5	2.5	TPH	25.70	3.70	NA	5000.0	mg/kg
BX38-010	749051.254	2082164.742	18.5	20.5	Tetrachloroethene	1.80	1.20	NA	615000.0	ug/kg
BX38-010	749051.254	2082164.742	18.5	20.5	TPH	83.20	4.00	NA	5000.0	mg/kg
BX38-010	749051.254	2082164.742	18.5	20.5	Uranium-238	2.29	NA	1.49	351.0	pCi/g
BX38-011	749130.966	2082218.219	0.0	0.5	TPH	282.00	3.60	NA	5000.0	mg/kg
BX38-011	749130.966	2082218.219	0.0	0.5	Uranium-234	3.68	NA	2.25	300.0	pCi/g
BX38-011	749130.966	2082218.219	0.0	0.5	Uranium-235	0.17	NA	0.09	8.0	pCi/g
BX38-011	749130.966	2082218.219	0.0	0.5	Uranium-238	3.68	NA	2.00	351.0	pCi/g
BX38-011	749130.966	2082218.219	0.5	2.5	TPH	203.00	3.70	NA	5000.0	mg/kg
BX38-011	749130.966	2082218.219	0.5	2.5	Uranium-235	0.13	NA	0.12	8.0	pCi/g
BX38-011	749130.966	2082218.219	2.5	4.5	TPH	99.30	3.80	NA	5000.0	mg/kg
BX38-011	749130.966	2082218.219	2.5	4.5	Uranium-235	0.16	NA	0.12	8.0	pCi/g
BX38-011	749130.966	2082218.219	4.5	6.5	TPH	32.40	3.80	NA	5000.0	mg/kg
BX38-011	749130.966	2082218.219	4.5	6.5	Uranium-234	3.75	NA	2.64	300.0	pCi/g
BX38-011	749130.966	2082218.219	4.5	6.5	Uranium-235	0.22	NA	0.12	8.0	pCi/g
BX38-011	749130.966	2082218.219	4.5	6.5	Uranium-238	3.75	NA	1.49	351.0	pCi/g
BX38-011	749130.966	2082218.219	6.5	8.5	TPH	1770.00	36.50	NA	5000.0	mg/kg
BX38-011	749130.966	2082218.219	6.5	8.5	Uranium-234	2.98	NA	2.64	300.0	pCi/g
BX38-011	749130.966	2082218.219	6.5	8.5	Uranium-235	0.18	NA	0.12	8.0	pCi/g
BX38-011	749130.966	2082218.219	6.5	8.5	Uranium-238	2.98	NA	1.49	351.0	pCi/g
BX38-011	749130.966	2082218.219	8.5	10.5	TPH	61.60	3.80	NA	5000.0	mg/kg
BX38-011	749130.966	2082218.219	14.5	16.5	Uranium-235	0.12	NA	0.12	8.0	pCi/g
BX38-011	749130.966	2082218.219	14.5	16.5	Uranium-238	1.68	NA	1.49	351.0	pCi/g
BX38-011	749130.966	2082218.219	18.5	20.5	Uranium-234	4.42	NA	2.64	300.0	pCi/g
BX38-011	749130.966	2082218.219	18.5	20.5	Uranium-235	0.18	NA	0.12	8.0	pCi/g
BX38-011	749130.966	2082218.219	18.5	20.5	Uranium-238	4.42	NA	1.49	351.0	pCi/g

Location Code	Nothing	Fasting	SBD (U)	SBD (U)	Analyte	Result	RL	Background	WVW, AL	Unit
BX38-011	749130.966	2082218.219	20.5	22.5	Uranium-235	0.14	NA	0.12	8.0	pCi/g
BX38-011	749130.966	2082218.219	20.5	22.5	Uranium-238	1.73	NA	1.49	351.0	pCi/g
BX38-013	749163.623	2082184.036	7.8	8.0	TPH	26500.00	763.00	NA	5000.0	mg/kg
BX38-013	749163.623	2082184.036	13.9	14.0	TPH	17100.00	756.00	NA	5000.0	mg/kg
BX38-013	749163.623	2082184.036	18.5	20.5	1,2,4-Trichlorobenzene	0.91	0.85	NA	92330000.0	ug/kg
BX38-013	749163.623	2082184.036	18.5	20.5	Methylene chloride	1.00	0.96	NA	25330000.0	ug/kg
BX38-013	749163.623	2082184.036	18.5	20.5	Naphthalene	4.20	1.00	NA	30900000.0	ug/kg
BX38-013	749163.623	2082184.036	18.5	20.5	TPH	157.00	4.00	NA	5000.0	mg/kg
BX38-013	749163.623	2082184.036	18.5	20.5	Uranium-235	0.14	NA	0.12	8.0	pCi/g
BX38-014	749164.247	2082170.131	3.7	4.0	TPH	29700.00	954.00	NA	5000.0	mg/kg
BX38-014	749164.247	2082170.131	11.7	12.0	TPH	24100.00	768.00	NA	5000.0	mg/kg
BX38-015	749142.147	2082175.998	8.0	8.3	TPH	23400.00	700.00	NA	5000.0	mg/kg
BX38-015	749142.147	2082175.998	12.0	14.0	TPH	350.00	NA	NA	5000.0	mg/L
BX38-015	749142.147	2082175.998	18.5	20.5	1,2-Dichlorobenzene	4.70	1.40	NA	31200000.0	ug/kg
BX38-015	749142.147	2082175.998	18.5	20.5	Naphthalene	5.30	1.10	NA	30900000.0	ug/kg
BX38-015	749142.147	2082175.998	18.5	20.5	TPH	2270.00	99.30	NA	5000.0	mg/kg
BX38-016	749142.962	2082187.854	7.9	8.0	TPH	24900.00	681.00	NA	5000.0	mg/kg
BX38-016	749142.962	2082187.854	18.5	20.5	1,2-Dichlorobenzene	3.30	1.30	NA	31200000.0	ug/kg
BX38-016	749142.962	2082187.854	18.5	20.5	Acetone	16.00	5.60	NA	1020000000.0	ug/kg
BX38-016	749142.962	2082187.854	18.5	20.5	Toluene	1.30	0.95	NA	313000000.0	ug/kg
BX38-016	749142.962	2082187.854	18.5	20.5	TPH	4290.00	98.70	NA	5000.0	mg/kg
BX38-016	749142.962	2082187.854	18.5	20.5	Xylene	4.80	3.40	NA	20400000.0	ug/kg
BX38-018	749107.465	2082192.755	6.2	6.7	TPH	44300.00	885.00	NA	5000.0	mg/kg
BX38-018	749107.465	2082192.755	20.5	21.0	TPH	19.10	3.90	NA	5000.0	mg/kg
BX38-018	749107.465	2082192.755	20.5	21.0	Uranium-235	0.19	NA	0.12	8.0	pCi/g
BX38-019	749120.898	2082184.921	16.5	17.5	Methylene chloride	0.99	0.97	NA	25330000.0	ug/kg
BX38-019	749120.898	2082184.921	16.5	17.5	TPH	11.00	3.90	NA	5000.0	mg/kg
BX38-019	749120.898	2082184.921	16.5	17.5	Uranium-235	0.23	NA	0.12	8.0	pCi/g

Closeout Report for IHSS Group 400-7

Location Code	Northing	Eastings	SBD (ft)	SED (ft)	Analyte	Result	RI	Background	WRW AT	Unit
BX38-019	749120.898	2082184.921	16.5	17.5	Uranium-238	2.61	NA	1.49	351.0	pCi/g
BX38-020	749118.375	2082169.741	16.0	18.7	1,2,4-Trichlorobenzene	0.81	0.79	NA	9230000.0	ug/kg
BX38-020	749118.375	2082169.741	16.0	18.7	Methylene chloride	1.10	0.89	NA	2530000.0	ug/kg
BX38-020	749118.375	2082169.741	16.0	18.7	Naphthalene	2.30	0.96	NA	3090000.0	ug/kg
BX38-020	749118.375	2082169.741	16.0	18.7	TPH	13.00	3.70	NA	5000.0	mg/kg
BX38-020	749118.375	2082169.741	16.0	18.7	Uranium-235	0.22	NA	0.12	8.0	pCi/g
BX38-020	749118.375	2082169.741	16.0	18.7	Uranium-238	2.19	NA	1.49	351.0	pCi/g
BX38-038	749153.290	2082158.845	0.0	0.5	TPH	65.00	3.80	NA	5000.0	mg/kg
BX38-038	749153.290	2082158.845	0.5	2.5	TPH	25.10	3.70	NA	5000.0	mg/kg
BX38-038	749153.290	2082158.845	2.5	4.5	TPH	4.10	3.80	NA	5000.0	mg/kg
BX38-038	749153.290	2082158.845	6.5	8.5	TPH	730.00	18.30	NA	5000.0	mg/kg
BX38-038	749153.290	2082158.845	8.5	10.5	TPH	9.90	3.70	NA	5000.0	mg/kg
BX38-038	749153.290	2082158.845	10.5	12.5	TPH	15.10	3.70	NA	5000.0	mg/kg
BX38-039	749107.801	2082175.807	0.0	0.5	TPH	462.00	8.00	NA	5000.0	mg/kg
BX38-039	749107.801	2082175.807	0.5	2.5	TPH	122.00	3.60	NA	5000.0	mg/kg
BX38-039	749107.801	2082175.807	2.5	4.5	TPH	52.10	3.90	NA	5000.0	mg/kg
BX38-039	749107.801	2082175.807	4.5	6.5	TPH	70.30	4.10	NA	5000.0	mg/kg
BX38-039	749107.801	2082175.807	6.5	8.5	TPH	18.40	3.70	NA	5000.0	mg/kg
BX38-039	749107.801	2082175.807	8.5	10.5	TPH	12.70	3.60	NA	5000.0	mg/kg
BX38-039	749107.801	2082175.807	10.5	12.5	TPH	32.30	3.70	NA	5000.0	mg/kg
BX38-039	749107.801	2082175.807	12.5	14.5	TPH	16.50	3.70	NA	5000.0	mg/kg
BX38-040	749116.885	2082209.629	0.0	0.5	TPH	1140.00	17.50	NA	5000.0	mg/kg
BX38-040	749116.885	2082209.629	0.5	2.5	TPH	1370.00	18.30	NA	5000.0	mg/kg
BX38-040	749116.885	2082209.629	2.5	4.5	TPH	437000.00	5680.00	NA	5000.0	mg/kg
BX38-040	749116.885	2082209.629	4.5	6.5	TPH	467000.00	7090.00	NA	5000.0	mg/kg
BX38-041	749153.323	2082208.348	0.0	0.5	TPH	217.00	3.70	NA	5000.0	mg/kg
BX38-041	749153.323	2082208.348	0.5	2.5	TPH	28.00	3.80	NA	5000.0	mg/kg
BX38-041	749153.323	2082208.348	2.5	4.5	TPH	8.30	3.70	NA	5000.0	mg/kg
BX38-041	749153.323	2082208.348	4.5	6.5	TPH	5.80	3.80	NA	5000.0	mg/kg

Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AL	Unit
BX38-041	749153.323	2082208.348	10.5	12.5	TPH	18.60	3.70	NA	5000.0	mg/kg
BX38-041	749153.323	2082208.348	12.5	14.5	TPH	17.60	3.70	NA	5000.0	mg/kg
BX38-041	749153.323	2082208.348	14.5	16.5	TPH	17.50	4.00	NA	5000.0	mg/kg
BX38-041	749153.323	2082208.348	16.5	18.5	TPH	56.90	4.00	NA	5000.0	mg/kg
BX38-041	749153.323	2082208.348	18.5	20.5	TPH	17.80	4.00	NA	5000.0	mg/kg
BX38-041	749153.323	2082208.348	20.5	22.5	TPH	22.00	3.90	NA	5000.0	mg/kg
BX38-042	749096.043	2082204.411	0.0	0.5	TPH	134.00	3.60	NA	5000.0	mg/kg
BX38-042	749096.043	2082204.411	0.5	2.5	TPH	5.50	3.50	NA	5000.0	mg/kg
BX38-042	749096.043	2082204.411	2.5	4.5	TPH	54.90	3.50	NA	5000.0	mg/kg
BX38-042	749096.043	2082204.411	4.5	6.5	TPH	32.00	3.60	NA	5000.0	mg/kg
BX38-042	749096.043	2082204.411	8.5	10.5	TPH	89.60	3.50	NA	5000.0	mg/kg
BX38-042	749096.043	2082204.411	12.5	14.5	TPH	490.00	7.20	NA	5000.0	mg/kg
BX38-042	749096.043	2082204.411	14.5	16.5	TPH	4.30	3.60	NA	5000.0	mg/kg
BX38-042	749096.043	2082204.411	16.5	18.5	TPH	54.60	4.10	NA	5000.0	mg/kg
BX38-042	749096.043	2082204.411	20.5	22.5	TPH	48.00	3.80	NA	5000.0	mg/kg
BX38-043	749115.424	2082227.424	0.0	0.5	TPH	287.00	3.70	NA	5000.0	mg/kg
BX38-043	749115.424	2082227.424	0.5	2.5	TPH	22.60	3.80	NA	5000.0	mg/kg
BX38-043	749115.424	2082227.424	2.5	4.5	TPH	40.20	3.60	NA	5000.0	mg/kg
BX38-043	749115.424	2082227.424	4.5	6.5	TPH	19.60	3.40	NA	5000.0	mg/kg
BX38-043	749115.424	2082227.424	6.5	8.5	TPH	4320.00	89.60	NA	5000.0	mg/kg
BX38-043	749115.424	2082227.424	8.5	10.5	TPH	52000.00	701.00	NA	5000.0	mg/kg
BX38-043	749115.424	2082227.424	10.5	12.0	TPH	42900.00	714.00	NA	5000.0	mg/kg
BX38-043	749115.424	2082227.424	16.0	16.5	TPH	1000.00	18.10	NA	5000.0	mg/kg
BX38-043	749115.424	2082227.424	16.5	18.5	TPH	287.00	4.00	NA	5000.0	mg/kg
BX38-044	749093.619	2082175.169	0.0	0.5	TPH	409.00	7.50	NA	5000.0	mg/kg
BX38-044	749093.619	2082175.169	0.5	2.5	TPH	28.60	3.60	NA	5000.0	mg/kg
BX38-044	749093.619	2082175.169	2.5	4.5	TPH	12.70	3.50	NA	5000.0	mg/kg
BX38-044	749093.619	2082175.169	4.5	6.5	TPH	22.30	4.90	NA	5000.0	mg/kg
BX38-044	749093.619	2082175.169	6.5	8.5	TPH	12.70	3.70	NA	5000.0	mg/kg

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Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW/AL	Unit
BX38-044	749093.619	2082175.169	8.5	10.5	TPH	11.80	3.70	NA	5000.0	mg/kg
BX38-044	749093.619	2082175.169	10.5	12.5	TPH	7.30	3.70	NA	5000.0	mg/kg
BX38-044	749093.619	2082175.169	12.5	14.5	TPH	7.00	3.80	NA	5000.0	mg/kg
BX38-044	749093.619	2082175.169	16.0	16.5	TPH	6.00	3.70	NA	5000.0	mg/kg
BX38-044	749093.619	2082175.169	16.5	18.5	TPH	6.40	3.70	NA	5000.0	mg/kg
BX38-044	749093.619	2082175.169	16.5	18.5	TPH	6.20	4.10	NA	5000.0	mg/kg
BX38-044	749093.619	2082175.169	18.5	20.5	TPH	6.50	4.00	NA	5000.0	mg/kg
BX38-044	749093.619	2082175.169	20.5	22.5	TPH	10.00	4.00	NA	5000.0	mg/kg
BX38-045	749116.424	2082239.069	0.0	0.5	TPH	1680.00	36.90	NA	5000.0	mg/kg
BX38-045	749116.424	2082239.069	0.5	2.5	TPH	223.00	3.60	NA	5000.0	mg/kg
BX38-045	749116.424	2082239.069	2.5	4.5	TPH	93.90	3.90	NA	5000.0	mg/kg
BX38-045	749116.424	2082239.069	4.5	6.5	TPH	60500.00	890.00	NA	5000.0	mg/kg
BX38-045	749116.424	2082239.069	6.5	8.5	TPH	11000.00	179.00	NA	5000.0	mg/kg
BX38-045	749116.424	2082239.069	8.5	10.5	TPH	40.40	3.80	NA	5000.0	mg/kg
BX38-045	749116.424	2082239.069	10.5	12.5	TPH	28.80	4.20	NA	5000.0	mg/kg
BX38-045	749116.424	2082239.069	12.5	14.5	TPH	8.70	4.00	NA	5000.0	mg/kg
BX38-046	749122.157	2082306.395	0.0	0.5	TPH	121.00	3.60	NA	5000.0	mg/kg
BX38-046	749122.157	2082306.395	0.5	2.5	TPH	26.70	3.90	NA	5000.0	mg/kg
BX38-046	749122.157	2082306.395	2.5	4.5	TPH	9.20	4.10	NA	5000.0	mg/kg
BX38-046	749122.157	2082306.395	4.5	6.5	TPH	7.90	3.70	NA	5000.0	mg/kg
BX38-046	749122.157	2082306.395	6.5	8.5	TPH	8.40	4.00	NA	5000.0	mg/kg
BX38-046	749122.157	2082306.395	8.5	10.5	TPH	8.40	4.40	NA	5000.0	mg/kg
BX38-046	749122.157	2082306.395	10.5	12.5	TPH	9.60	4.10	NA	5000.0	mg/kg
BX38-046	749122.157	2082306.395	12.5	14.5	TPH	10.40	4.00	NA	5000.0	mg/kg
BX38-046	749122.157	2082306.395	14.5	16.5	TPH	6.20	4.00	NA	5000.0	mg/kg
BX38-046	749122.157	2082306.395	16.5	18.5	TPH	8.20	4.10	NA	5000.0	mg/kg
BX38-046	749122.157	2082306.395	18.5	20.5	TPH	5.20	4.00	NA	5000.0	mg/kg
BX38-046	749122.157	2082306.395	20.5	22.5	TPH	7.60	3.80	NA	5000.0	mg/kg
BX38-047	748990.377	2082215.805	0.5	2.0	Trichloroethene	2.00	0.89	NA	19600.0	ug/kg

Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRWAL	Unit
BX39-000	749162.020	2082243.740	0.0	0.5	Uranium-235	0.26	NA	0.09	8.0	pCi/g
BX39-001	749289.214	2082268.789	0.0	0.5	Pyrene	75.00	42.00	NA	22100000.0	ug/kg
BX39-001	749289.214	2082268.789	0.5	2.5	Acetone	36.00	4.90	NA	102000000.0	ug/kg
BX39-001	749289.214	2082268.789	0.5	2.5	Uranium-234	2.91	NA	2.64	300.0	pCi/g
BX39-001	749289.214	2082268.789	0.5	2.5	Uranium-238	2.91	NA	1.49	351.0	pCi/g
BX39-003	749216.977	2082272.619	0.0	0.5	Benzo(a)anthracene	41.00	41.00	NA	34900.0	ug/kg
BX39-003	749216.977	2082272.619	0.0	0.5	Pyrene	81.00	42.00	NA	22100000.0	ug/kg
BX39-003	749216.977	2082272.619	0.0	0.5	Uranium-234	3.22	NA	2.25	300.0	pCi/g
BX39-003	749216.977	2082272.619	0.0	0.5	Uranium-238	3.22	NA	2.00	351.0	pCi/g
BX39-003	749216.977	2082272.619	0.5	2.5	Uranium-235	0.16	NA	0.12	8.0	pCi/g
BX39-003	749216.977	2082272.619	0.5	2.5	Uranium-238	1.54	NA	1.49	351.0	pCi/g
BX39-004	749181.380	2082273.959	0.0	0.5	Benzo(a)anthracene	170.00	41.00	NA	34900.0	ug/kg
BX39-004	749181.380	2082273.959	0.0	0.5	Benzo(a)pyrene	200.00	98.00	NA	3490.0	ug/kg
BX39-004	749181.380	2082273.959	0.0	0.5	Benzo(b)fluoranthene	170.00	100.00	NA	34900.0	ug/kg
BX39-004	749181.380	2082273.959	0.0	0.5	Benzo(k)fluoranthene	150.00	97.00	NA	349000.0	ug/kg
BX39-004	749181.380	2082273.959	0.0	0.5	bis(2-Ethylhexyl)phthalate	12000.00	140.00	NA	1970000.0	ug/kg
BX39-004	749181.380	2082273.959	0.0	0.5	Chrysene	210.00	56.00	NA	3490000.0	ug/kg
BX39-004	749181.380	2082273.959	0.0	0.5	Dibenz(a,h)anthracene	66.00	49.00	NA	3490.0	ug/kg
BX39-004	749181.380	2082273.959	0.0	0.5	Fluoranthene	370.00	88.00	NA	27200000.0	ug/kg
BX39-004	749181.380	2082273.959	0.0	0.5	Indeno(1,2,3-cd)pyrene	140.00	50.00	NA	34900.0	ug/kg
BX39-004	749181.380	2082273.959	0.0	0.5	Pyrene	320.00	42.00	NA	22100000.0	ug/kg
BX39-004	749181.380	2082273.959	0.0	0.5	Uranium-235	0.11	NA	0.09	8.0	pCi/g
BX39-004	749181.380	2082273.959	0.5	2.5	bis(2-Ethylhexyl)phthalate	900.00	71.00	NA	1970000.0	ug/kg
BX39-004	749181.380	2082273.959	0.5	2.5	Lead	43.90	NA	24.97	1000.0	mg/kg
BX39-004	749181.380	2082273.959	0.5	2.5	Pyrene	80.00	41.00	NA	22100000.0	ug/kg
BX39-004	749181.380	2082273.959	0.5	2.5	Uranium-235	0.13	NA	0.12	8.0	pCi/g
BX39-005	749165.001	2082306.059	0.0	0.5	Chrysene	110.00	63.00	NA	3490000.0	ug/kg
BX39-005	749165.001	2082306.059	0.0	0.5	Pyrene	79.00	48.00	NA	22100000.0	ug/kg
BX39-006	749201.234	2082304.136	0.0	0.5	Aluminum	17500.00	NA	16902.00	228000.0	mg/kg

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Closeout Report for IHSS Group 400-7

Location Code	Northing	Eastng	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRWAL	Unit
BX39-006	749201.234	2082304.136	0.0	0.5	bis(2-Ethylhexyl)phthalate	230.00	77.00	NA	1970000.0	ug/kg
BX39-006	749201.234	2082304.136	0.0	0.5	Cobalt	12.90	NA	10.91	1550.0	mg/kg
BX39-006	749201.234	2082304.136	0.0	0.5	Lithium	11.80	NA	11.55	20400.0	mg/kg
BX39-006	749201.234	2082304.136	0.5	2.5	Uranium-235	0.23	NA	0.12	8.0	pCi/g
BX39-006	749201.234	2082304.136	0.5	2.5	Uranium-238	2.05	NA	1.49	351.0	pCi/g
BX39-007	749232.416	2082299.773	0.0	0.5	Aluminum	26900.00	NA	16902.00	228000.0	mg/kg
BX39-007	749232.416	2082299.773	0.0	0.5	Benzo(a)anthracene	210.00	43.00	NA	34900.0	ug/kg
BX39-007	749232.416	2082299.773	0.0	0.5	Benzo(a)pyrene	250.00	100.00	NA	3490.0	ug/kg
BX39-007	749232.416	2082299.773	0.0	0.5	Benzo(b)fluoranthene	210.00	110.00	NA	34900.0	ug/kg
BX39-007	749232.416	2082299.773	0.0	0.5	Benzo(k)fluoranthene	200.00	100.00	NA	349000.0	ug/kg
BX39-007	749232.416	2082299.773	0.0	0.5	Beryllium	1.30	NA	0.97	921.0	mg/kg
BX39-007	749232.416	2082299.773	0.0	0.5	bis(2-Ethylhexyl)phthalate	340.00	76.00	NA	1970000.0	ug/kg
BX39-007	749232.416	2082299.773	0.0	0.5	Chromium	20.70	NA	16.99	268.0	mg/kg
BX39-007	749232.416	2082299.773	0.0	0.5	Chrysene	290.00	58.00	NA	3490000.0	ug/kg
BX39-007	749232.416	2082299.773	0.0	0.5	Fluoranthene	430.00	92.00	NA	27200000.0	ug/kg
BX39-007	749232.416	2082299.773	0.0	0.5	Indeno(1,2,3-cd)pyrene	170.00	53.00	NA	34900.0	ug/kg
BX39-007	749232.416	2082299.773	0.0	0.5	Lithium	16.10	NA	11.55	20400.0	mg/kg
BX39-007	749232.416	2082299.773	0.0	0.5	Nickel	19.10	NA	14.91	20400.0	mg/kg
BX39-007	749232.416	2082299.773	0.0	0.5	Pyrene	440.00	44.00	NA	22100000.0	ug/kg
BX39-007	749232.416	2082299.773	0.0	0.5	Uranium-235	0.18	NA	0.09	8.0	pCi/g
BX39-007	749232.416	2082299.773	0.5	1.0	Uranium-235	0.13	NA	0.12	8.0	pCi/g
BX39-007	749232.416	2082299.773	0.5	1.0	Uranium-238	1.93	NA	1.49	351.0	pCi/g
BX39-008	749272.980	2082301.060	0.0	0.5	Acenaphthene	480.00	48.00	NA	40800000.0	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Anthracene	2200.00	81.00	NA	204000000.0	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Benzo(a)anthracene	9300.00	200.00	NA	34900.0	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Benzo(a)pyrene	10000.00	490.00	NA	3490.0	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Benzo(b)fluoranthene	9000.00	520.00	NA	34900.0	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Benzo(k)fluoranthene	7500.00	480.00	NA	349000.0	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Chrysene	10000.00	280.00	NA	3490000.0	ug/kg

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Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AL	Unit
BX39-008	749272.980	2082301.060	0.0	0.5	Dibenz(a,h)anthracene	2800.00	49.00	NA	3490.0	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Dibenzofuran	180.00	85.00	NA	2950000.0	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Fluoranthene	17000.00	440.00	NA	27200000.0	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Fluorene	550.00	79.00	NA	40800000.0	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Indeno(1,2,3-cd)pyrene	6900.00	50.00	NA	34900.0	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Pyrene	17000.00	210.00	NA	22100000.0	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Uranium-235	0.16	NA	0.09	8.0	pCi/g
BX39-008	749272.980	2082301.060	0.5	0.8	Acenaphthene	590.00	49.00	NA	40800000.0	ug/kg
BX39-008	749272.980	2082301.060	0.5	0.8	Anthracene	2700.00	83.00	NA	204000000.0	ug/kg
BX39-008	749272.980	2082301.060	0.5	0.8	Benzo(a)anthracene	13000.00	210.00	NA	34900.0	ug/kg
BX39-008	749272.980	2082301.060	0.5	0.8	Benzo(a)pyrene	14000.00	500.00	NA	3490.0	ug/kg
BX39-008	749272.980	2082301.060	0.5	0.8	Benzo(b)fluoranthene	12000.00	530.00	NA	34900.0	ug/kg
BX39-008	749272.980	2082301.060	0.5	0.8	Benzo(k)fluoranthene	12000.00	490.00	NA	349000.0	ug/kg
BX39-008	749272.980	2082301.060	0.5	0.8	Chrysene	15000.00	280.00	NA	3490000.0	ug/kg
BX39-008	749272.980	2082301.060	0.5	0.8	Dibenz(a,h)anthracene	3900.00	50.00	NA	3490.0	ug/kg
BX39-008	749272.980	2082301.060	0.5	0.8	Dibenzofuran	230.00	87.00	NA	2950000.0	ug/kg
BX39-008	749272.980	2082301.060	0.5	0.8	Fluoranthene	23000.00	440.00	NA	27200000.0	ug/kg
BX39-008	749272.980	2082301.060	0.5	0.8	Fluorene	660.00	80.00	NA	40800000.0	ug/kg
BX39-008	749272.980	2082301.060	0.5	0.8	Indeno(1,2,3-cd)pyrene	9900.00	250.00	NA	34900.0	ug/kg
BX39-008	749272.980	2082301.060	0.5	0.8	Pyrene	24000.00	210.00	NA	22100000.0	ug/kg
BX39-008	749272.980	2082301.060	0.5	0.8	Tetrachloroethene	2.10	1.00	NA	615000.0	ug/kg
BX39-008	749272.980	2082301.060	0.5	0.8	Uranium-235	0.20	NA	0.12	8.0	pCi/g
BX39-009	749292.111	2082331.118	0.0	0.5	Benzo(a)anthracene	69.00	43.00	NA	34900.0	ug/kg
BX39-009	749292.111	2082331.118	0.0	0.5	Chrysene	87.00	59.00	NA	3490000.0	ug/kg
BX39-009	749292.111	2082331.118	0.0	0.5	Fluoranthene	160.00	93.00	NA	27200000.0	ug/kg
BX39-009	749292.111	2082331.118	0.0	0.5	Pyrene	150.00	44.00	NA	22100000.0	ug/kg
BX39-009	749292.111	2082331.118	0.5	1.3	Acetone	7.90	4.80	NA	102000000.0	ug/kg
BX39-009	749292.111	2082331.118	0.5	1.3	Benzo(a)anthracene	85.00	42.00	NA	34900.0	ug/kg
BX39-009	749292.111	2082331.118	0.5	1.3	Chrysene	88.00	57.00	NA	3490000.0	ug/kg

Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AL	Unit
BX39-009	749292.111	2082331.118	0.5	1.3	Fluoranthene	200.00	90.00	NA	27200000.0	ug/kg
BX39-009	749292.111	2082331.118	0.5	1.3	Indeno(1,2,3-cd)pyrene	57.00	51.00	NA	34900.0	ug/kg
BX39-009	749292.111	2082331.118	0.5	1.3	Lead	40.90	NA	24.97	1000.0	mg/kg
BX39-009	749292.111	2082331.118	0.5	1.3	Pyrene	180.00	43.00	NA	22100000.0	ug/kg
BX39-009	749292.111	2082331.118	0.5	1.3	Uranium-238	1.80	NA	1.49	351.0	pCi/g
BX39-010	749256.458	2082332.860	0.0	0.5	Aluminum	24000.00	NA	16902.00	228000.0	mg/kg
BX39-010	749256.458	2082332.860	0.0	0.5	Barium	148.00	NA	141.26	26400.0	mg/kg
BX39-010	749256.458	2082332.860	0.0	0.5	Benzo(a)anthracene	270.00	41.00	NA	34900.0	ug/kg
BX39-010	749256.458	2082332.860	0.0	0.5	Benzo(a)pyrene	270.00	99.00	NA	3490.0	ug/kg
BX39-010	749256.458	2082332.860	0.0	0.5	Benzo(b)fluoranthene	260.00	110.00	NA	34900.0	ug/kg
BX39-010	749256.458	2082332.860	0.0	0.5	Benzo(k)fluoranthene	240.00	98.00	NA	349000.0	ug/kg
BX39-010	749256.458	2082332.860	0.0	0.5	Beryllium	1.10	NA	0.97	921.0	mg/kg
BX39-010	749256.458	2082332.860	0.0	0.5	Butylbenzylphthalate	1000.00	36.00	NA	147000000.0	ug/kg
BX39-010	749256.458	2082332.860	0.0	0.5	Chrysene	350.00	56.00	NA	3490000.0	ug/kg
BX39-010	749256.458	2082332.860	0.0	0.5	Copper	23.40	NA	18.06	40900.0	mg/kg
BX39-010	749256.458	2082332.860	0.0	0.5	Fluoranthene	700.00	89.00	NA	27200000.0	ug/kg
BX39-010	749256.458	2082332.860	0.0	0.5	Indeno(1,2,3-cd)pyrene	190.00	51.00	NA	34900.0	ug/kg
BX39-010	749256.458	2082332.860	0.0	0.5	Iron	20900.00	NA	18037.00	307000.0	mg/kg
BX39-010	749256.458	2082332.860	0.0	0.5	Lithium	15.40	NA	11.55	20400.0	mg/kg
BX39-010	749256.458	2082332.860	0.0	0.5	Manganese	420.00	NA	365.08	3480.0	mg/kg
BX39-010	749256.458	2082332.860	0.0	0.5	Nickel	15.10	NA	14.91	20400.0	mg/kg
BX39-010	749256.458	2082332.860	0.0	0.5	Pyrene	530.00	42.00	NA	22100000.0	ug/kg
BX39-010	749256.458	2082332.860	0.0	0.5	Uranium-234	4.00	NA	2.25	300.0	pCi/g
BX39-010	749256.458	2082332.860	0.0	0.5	Uranium-235	0.51	NA	0.09	8.0	pCi/g
BX39-010	749256.458	2082332.860	0.0	0.5	Uranium-238	4.00	NA	2.00	351.0	pCi/g
BX39-010	749256.458	2082332.860	0.5	2.5	Benzo(a)anthracene	140.00	42.00	NA	34900.0	ug/kg
BX39-010	749256.458	2082332.860	0.5	2.5	Benzo(a)pyrene	150.00	100.00	NA	3490.0	ug/kg
BX39-010	749256.458	2082332.860	0.5	2.5	Benzo(b)fluoranthene	120.00	110.00	NA	34900.0	ug/kg
BX39-010	749256.458	2082332.860	0.5	2.5	Benzo(k)fluoranthene	110.00	100.00	NA	349000.0	ug/kg

Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AL	Unit
BX39-010	749256.458	2082332.860	0.5	2.5	Chrysene	160.00	58.00	NA	3490000.0	ug/kg
BX39-010	749256.458	2082332.860	0.5	2.5	Fluoranthene	360.00	91.00	NA	27200000.0	ug/kg
BX39-010	749256.458	2082332.860	0.5	2.5	Indeno(1,2,3-cd)pyrene	92.00	52.00	NA	34900.0	ug/kg
BX39-010	749256.458	2082332.860	0.5	2.5	Pyrene	300.00	44.00	NA	22100000.0	ug/kg
BX39-010	749256.458	2082332.860	0.5	2.5	Uranium-235	0.30	NA	0.12	8.0	pCi/g
BX39-011	749219.394	2082334.963	0.0	0.5	Strontium	55.70	NA	48.94	613000.0	mg/kg
BX39-011	749219.394	2082334.963	0.0	0.5	Uranium-234	2.52	NA	2.25	300.0	pCi/g
BX39-011	749219.394	2082334.963	0.0	0.5	Uranium-235	0.20	NA	0.09	8.0	pCi/g
BX39-011	749219.394	2082334.963	0.0	0.5	Uranium-238	2.52	NA	2.00	351.0	pCi/g
BX39-011	749219.394	2082334.963	0.5	2.5	Tetrachloroethene	1.20	1.10	NA	615000.0	ug/kg
BX39-011	749219.394	2082334.963	0.5	2.5	Uranium-235	0.17	NA	0.12	8.0	pCi/g
BX39-011	749219.394	2082334.963	0.5	2.5	Uranium-238	1.95	NA	1.49	351.0	pCi/g
BX39-012	749184.480	2082336.647	0.0	0.5	Benzo(a)anthracene	140.00	39.00	NA	34900.0	ug/kg
BX39-012	749184.480	2082336.647	0.0	0.5	Benzo(a)pyrene	150.00	95.00	NA	3490.0	ug/kg
BX39-012	749184.480	2082336.647	0.0	0.5	Benzo(b)fluoranthene	120.00	100.00	NA	34900.0	ug/kg
BX39-012	749184.480	2082336.647	0.0	0.5	Benzo(k)fluoranthene	130.00	94.00	NA	349000.0	ug/kg
BX39-012	749184.480	2082336.647	0.0	0.5	bis(2-Ethylhexyl)phthalate	290.00	70.00	NA	1970000.0	ug/kg
BX39-012	749184.480	2082336.647	0.0	0.5	Butylbenzylphthalate	210.00	34.00	NA	147000000.0	ug/kg
BX39-012	749184.480	2082336.647	0.0	0.5	Chrysene	160.00	54.00	NA	3490000.0	ug/kg
BX39-012	749184.480	2082336.647	0.0	0.5	Fluoranthene	290.00	85.00	NA	27200000.0	ug/kg
BX39-012	749184.480	2082336.647	0.0	0.5	Indeno(1,2,3-cd)pyrene	92.00	49.00	NA	34900.0	ug/kg
BX39-012	749184.480	2082336.647	0.0	0.5	Nickel	15.90	NA	14.91	20400.0	mg/kg
BX39-012	749184.480	2082336.647	0.0	0.5	Pyrene	260.00	40.00	NA	22100000.0	ug/kg
BX39-012	749184.480	2082336.647	0.0	0.5	Strontium	79.00	NA	48.94	613000.0	mg/kg
BX39-012	749184.480	2082336.647	0.0	0.5	Uranium-235	0.17	NA	0.09	8.0	pCi/g
BX39-012	749184.480	2082336.647	0.0	0.5	Vanadium	46.30	NA	45.59	7150.0	mg/kg
BX39-012	749184.480	2082336.647	0.5	2.5	Benzo(a)anthracene	42.00	40.00	NA	34900.0	ug/kg
BX39-012	749184.480	2082336.647	0.5	2.5	Fluoranthene	99.00	87.00	NA	27200000.0	ug/kg
BX39-012	749184.480	2082336.647	0.5	2.5	Pyrene	91.00	41.00	NA	22100000.0	ug/kg

## Closeout Report for IHSS Group 400-7

Location Code	Notifying	Harding	SBD (ft)	SDD (ft)	Analyte	Ratio	IRL	Background	Surveyed	Units
BX39-017	749183.380	2082199.570	7.4	7.41	Uranium, Total	4.70	NA	3.04	2750.0	mg/kg
BX39-017	749183.380	2082199.570	7.4	7.4	Uranium-238	1.56	NA	1.49	351.0	pCi/g
BX39-029	749183.305	2082179.741	0.0	0.5	TPH	51.50	3.60	NA	5000.0	mg/kg
BX39-029	749183.305	2082179.741	2.5	4.5	TPH	30900.00	399.00	NA	5000.0	mg/kg
BX39-029	749183.305	2082179.741	4.5	6.5	TPH	6180.00	184.00	NA	5000.0	mg/kg
BX39-029	749183.305	2082179.741	6.5	8.5	TPH	34300.00	1030.00	NA	5000.0	mg/kg
BX39-029	749183.305	2082179.741	8.5	10.5	TPH	27900.00	506.00	NA	5000.0	mg/kg
BX39-029	749183.305	2082179.741	10.5	12.5	TPH	17200.00	373.00	NA	5000.0	mg/kg
BX39-029	749183.305	2082179.741	12.5	14.5	TPH	38400.00	744.00	NA	5000.0	mg/kg
BX39-029	749183.305	2082179.741	14.5	16.5	TPH	20300.00	369.00	NA	5000.0	mg/kg
BX39-029	749183.305	2082179.741	16.5	18.5	TPH	9760.00	202.00	NA	5000.0	mg/kg
BX39-029	749183.305	2082179.741	18.5	20.5	TPH	2930.00	39.70	NA	5000.0	mg/kg
BX39-029	749183.305	2082179.741	20.5	22.5	TPH	903.00	20.00	NA	5000.0	mg/kg
BX39-030	749219.778	2082176.448	0.0	0.5	TPH	240.00	7.00	NA	5000.0	mg/kg
BX39-030	749219.778	2082176.448	0.5	2.5	TPH	70.00	3.60	NA	5000.0	mg/kg
BX39-030	749219.778	2082176.448	2.5	4.5	TPH	5.90	3.80	NA	5000.0	mg/kg
BX39-030	749219.778	2082176.448	4.5	6.5	TPH	5.50	3.60	NA	5000.0	mg/kg
BX39-030	749219.778	2082176.448	6.5	8.5	TPH	7.10	3.60	NA	5000.0	mg/kg
BX39-030	749219.778	2082176.448	8.5	10.5	TPH	4.90	3.70	NA	5000.0	mg/kg
BX39-030	749219.778	2082176.448	10.5	12.5	TPH	7.90	3.60	NA	5000.0	mg/kg
BX39-030	749219.778	2082176.448	12.5	14.5	TPH	6.30	3.60	NA	5000.0	mg/kg
BX39-030	749219.778	2082176.448	14.5	16.5	TPH	6.40	3.70	NA	5000.0	mg/kg
BX39-030	749219.778	2082176.448	16.5	18.5	TPH	6.40	3.70	NA	5000.0	mg/kg
BX39-030	749219.778	2082176.448	18.5	20.5	TPH	9.50	4.00	NA	5000.0	mg/kg
BX39-030	749219.778	2082176.448	20.5	22.5	TPH	8.20	3.90	NA	5000.0	mg/kg
BY38-000	749131.677	2082369.670	0.0	0.5	Antimony	0.50	NA	0.47	409.0	mg/kg
BY38-000	749131.677	2082369.670	0.0	0.5	Benzo(a)anthracene	42.00	40.00	NA	34900.0	ug/kg
BY38-000	749131.677	2082369.670	0.0	0.5	Copper	36.80	NA	18.06	40900.0	mg/kg
BY38-000	749131.677	2082369.670	0.0	0.5	Iron	20500.00	NA	18037.00	307000.0	mg/kg

## Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRWAL	Unit
BY38-000	749131.677	2082369.670	0.0	0.5	Pyrene	86.00	41.00	NA	22100000.0	ug/kg
BY38-000	749131.677	2082369.670	0.0	0.5	Strontium	63.30	NA	48.94	613000.0	mg/kg
BY38-000	749131.677	2082369.670	0.0	0.5	Uranium-235	0.15	NA	0.09	8.0	pCi/g
BY38-000	749131.677	2082369.670	0.5	2.5	Pyrene	61.00	45.00	NA	22100000.0	ug/kg
BY38-001	749148.541	2082338.099	0.0	0.5	Benzo(a)anthracene	43.00	42.00	NA	34900.0	ug/kg
BY38-001	749148.541	2082338.099	0.0	0.5	Pyrene	74.00	43.00	NA	22100000.0	ug/kg
BY38-001	749148.541	2082338.099	0.0	0.5	Uranium-235	0.14	NA	0.09	8.0	pCi/g
BY38-002	749109.548	2082339.740	0.0	0.5	Arsenic	12.00	NA	10.09	22.2	mg/kg
BY38-002	749109.548	2082339.740	0.0	0.5	bis(2-Ethylhexyl)phthalate	3400.00	70.00	NA	1970000.0	ug/kg
BY38-002	749109.548	2082339.740	0.0	0.5	Copper	45.40	NA	18.06	40900.0	mg/kg
BY38-002	749109.548	2082339.740	0.0	0.5	Uranium-235	0.13	NA	0.09	8.0	pCi/g
BY38-002	749109.548	2082339.740	0.5	2.5	Acetone	6.00	4.90	NA	102000000.0	ug/kg
BY38-002	749109.548	2082339.740	0.5	2.5	Pyrene	85.00	43.00	NA	22100000.0	ug/kg
BY38-003	749076.617	2082341.184	0.0	0.5	Copper	19.70	NA	18.06	40900.0	mg/kg
BY38-003	749076.617	2082341.184	0.0	0.5	Uranium-235	0.14	NA	0.09	8.0	pCi/g
BY38-003	749076.617	2082341.184	0.5	2.5	Benzo(a)anthracene	54.00	41.00	NA	34900.0	ug/kg
BY38-003	749076.617	2082341.184	0.5	2.5	Chrysene	64.00	55.00	NA	3490000.0	ug/kg
BY38-003	749076.617	2082341.184	0.5	2.5	Fluoranthene	160.00	87.00	NA	27200000.0	ug/kg
BY38-003	749076.617	2082341.184	0.5	2.5	Methylene chloride	1.30	0.87	NA	2530000.0	ug/kg
BY38-003	749076.617	2082341.184	0.5	2.5	Pyrene	140.00	42.00	NA	22100000.0	ug/kg
BY38-003	749076.617	2082341.184	0.5	2.5	Uranium-235	0.15	NA	0.12	8.0	pCi/g
BY38-003	749076.617	2082341.184	0.5	2.5	Uranium-238	1.81	NA	1.49	351.0	pCi/g
BY38-004	749096.235	2082372.028	0.0	0.5	Aluminum	25200.00	NA	16902.00	228000.0	mg/kg
BY38-004	749096.235	2082372.028	0.0	0.5	Beryllium	1.10	NA	0.97	921.0	mg/kg
BY38-004	749096.235	2082372.028	0.0	0.5	Chromium	20.20	NA	16.99	268.0	mg/kg
BY38-004	749096.235	2082372.028	0.0	0.5	Fluoranthene	100.00	90.00	NA	27200000.0	ug/kg
BY38-004	749096.235	2082372.028	0.0	0.5	Iron	19000.00	NA	18037.00	307000.0	mg/kg
BY38-004	749096.235	2082372.028	0.0	0.5	Lithium	16.20	NA	11.55	20400.0	mg/kg
BY38-004	749096.235	2082372.028	0.0	0.5	Nickel	20.70	NA	14.91	20400.0	mg/kg

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Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AL	Unit
BY38-004	749096.235	2082372.028	0.0	0.5	Pyrene	96.00	43.00	NA	22100000.0	ug/kg
BY38-004	749096.235	2082372.028	0.0	0.5	Uranium-235	0.19	NA	0.09	8.0	pCi/g
BY38-004	749096.235	2082372.028	0.0	0.5	Vanadium	46.90	NA	45.59	7150.0	mg/kg
BY38-004	749096.235	2082372.028	0.5	2.5	Pyrene	84.00	44.00	NA	22100000.0	ug/kg
BY38-005	749079.498	2082403.746	0.0	0.5	Benzo(a)anthracene	55.00	40.00	NA	34900.0	ug/kg
BY38-005	749079.498	2082403.746	0.0	0.5	Chrysene	65.00	54.00	NA	3490000.0	ug/kg
BY38-005	749079.498	2082403.746	0.0	0.5	Fluoranthene	130.00	86.00	NA	27200000.0	ug/kg
BY38-005	749079.498	2082403.746	0.0	0.5	Pyrene	110.00	41.00	NA	22100000.0	ug/kg
BY38-006	749115.403	2082402.004	0.0	0.5	Benzo(a)anthracene	45.00	40.00	NA	34900.0	ug/kg
BY38-006	749115.403	2082402.004	0.0	0.5	Chromium	20.00	NA	16.99	268.0	mg/kg
BY38-006	749115.403	2082402.004	0.0	0.5	Copper	20.70	NA	18.06	40900.0	mg/kg
BY38-006	749115.403	2082402.004	0.0	0.5	Fluoranthene	100.00	86.00	NA	27200000.0	ug/kg
BY38-006	749115.403	2082402.004	0.0	0.5	Pyrene	98.00	41.00	NA	22100000.0	ug/kg
BY38-006	749115.403	2082402.004	0.0	0.5	Uranium-235	0.11	NA	0.09	8.0	pCi/g
BY38-006	749115.403	2082402.004	0.5	2.5	Pyrene	55.00	41.00	NA	22100000.0	ug/kg
BY38-006	749115.403	2082402.004	0.5	2.5	Uranium-235	0.16	NA	0.12	8.0	pCi/g
BY38-007	749152.286	2082401.245	0.0	0.5	Aluminum	20900.00	NA	16902.00	228000.0	mg/kg
BY38-007	749152.286	2082401.245	0.0	0.5	Iron	18700.00	NA	18037.00	307000.0	mg/kg
BY38-007	749152.286	2082401.245	0.0	0.5	Lithium	13.90	NA	11.55	20400.0	mg/kg
BY38-007	749152.286	2082401.245	0.0	0.5	Pyrene	78.00	42.00	NA	22100000.0	ug/kg
BY38-007	749152.286	2082401.245	0.0	0.5	Uranium-235	0.13	NA	0.09	8.0	pCi/g
BY38-007	749152.286	2082401.245	0.5	2.5	n-Nitrosodipropylamine	700.00	94.00	NA	5470.0	ug/kg
BY38-007	749152.286	2082401.245	0.5	2.5	Pyrene	79.00	43.00	NA	22100000.0	ug/kg
BY38-007	749152.286	2082401.245	0.5	2.5	Uranium-235	0.15	NA	0.12	8.0	pCi/g
BY38-008	749097.750	2082482.857	0.0	0.5	Arsenic	11.40	NA	10.09	22.2	mg/kg
BY38-008	749097.750	2082482.857	0.0	0.5	Barium	573.00	NA	141.26	26400.0	mg/kg
BY38-008	749097.750	2082482.857	0.0	0.5	Chromium	47.00	NA	16.99	268.0	mg/kg
BY38-008	749097.750	2082482.857	0.0	0.5	Copper	79.00	NA	18.06	40900.0	mg/kg
BY38-008	749097.750	2082482.857	0.0	0.5	Iron	30800.00	NA	18037.00	307000.0	mg/kg

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## Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WROW AL	Unit
BY38-008	749097.750	2082482.857	0.0	0.5	Nickel	38.30	NA	14.91	20400.0	mg/kg
BY38-008	749097.750	2082482.857	0.0	0.5	Strontium	250.00	NA	48.94	613000.0	mg/kg
BY38-008	749097.750	2082482.857	0.0	0.5	Uranium-234	3.00	NA	2.25	300.0	pCi/g
BY38-008	749097.750	2082482.857	0.0	0.5	Uranium-235	0.40	NA	0.09	8.0	pCi/g
BY38-008	749097.750	2082482.857	0.0	0.5	Uranium-238	3.00	NA	2.00	351.0	pCi/g
BY38-008	749097.750	2082482.857	0.0	0.5	Vanadium	91.70	NA	45.59	7150.0	mg/kg
BY38-008	749097.750	2082482.857	0.0	0.5	Zinc	91.20	NA	73.76	307000.0	mg/kg
BY38-008	749097.750	2082482.857	0.5	2.5	Acenaphthene	220.00	52.00	NA	40800000.0	ug/kg
BY38-008	749097.750	2082482.857	0.5	2.5	Anthracene	460.00	88.00	NA	204000000.0	ug/kg
BY38-008	749097.750	2082482.857	0.5	2.5	Barium	672.00	NA	289.38	26400.0	mg/kg
BY38-008	749097.750	2082482.857	0.5	2.5	Benzo(a)anthracene	510.00	44.00	NA	34900.0	ug/kg
BY38-008	749097.750	2082482.857	0.5	2.5	Benzo(a)pyrene	420.00	110.00	NA	3490.0	ug/kg
BY38-008	749097.750	2082482.857	0.5	2.5	Benzo(b)fluoranthene	370.00	110.00	NA	34900.0	ug/kg
BY38-008	749097.750	2082482.857	0.5	2.5	Benzo(k)fluoranthene	340.00	100.00	NA	349000.0	ug/kg
BY38-008	749097.750	2082482.857	0.5	2.5	bis(2-Ethylhexyl)phthalate	84.00	78.00	NA	1970000.0	ug/kg
BY38-008	749097.750	2082482.857	0.5	2.5	Chrysene	480.00	60.00	NA	3490000.0	ug/kg
BY38-008	749097.750	2082482.857	0.5	2.5	Dibenz(a,h)anthracene	95.00	53.00	NA	3490.0	ug/kg
BY38-008	749097.750	2082482.857	0.5	2.5	Dibenzofuran	120.00	93.00	NA	2950000.0	ug/kg
BY38-008	749097.750	2082482.857	0.5	2.5	Fluoranthene	1500.00	95.00	NA	27200000.0	ug/kg
BY38-008	749097.750	2082482.857	0.5	2.5	Fluorene	220.00	86.00	NA	40800000.0	ug/kg
BY38-008	749097.750	2082482.857	0.5	2.5	Indeno(1,2,3-cd)pyrene	210.00	54.00	NA	34900.0	ug/kg
BY38-008	749097.750	2082482.857	0.5	2.5	Naphthalene	110.00	79.00	NA	3090000.0	ug/kg
BY38-008	749097.750	2082482.857	0.5	2.5	Pyrene	1100.00	45.00	NA	22100000.0	ug/kg
BY38-008	749097.750	2082482.857	0.5	2.5	Uranium-234	3.00	NA	2.64	300.0	pCi/g
BY38-008	749097.750	2082482.857	0.5	2.5	Uranium-235	0.30	NA	0.12	8.0	pCi/g
BY38-008	749097.750	2082482.857	0.5	2.5	Uranium-238	3.00	NA	1.49	351.0	pCi/g
BY38-008	749097.750	2082482.857	0.5	2.5	Vanadium	93.80	NA	88.49	7150.0	mg/kg
BY38-009	749099.026	2082522.941	0.5	2.5	Barium	660.00	NA	289.38	26400.0	mg/kg
BY38-009	749099.026	2082522.941	0.5	2.5	Copper	54.90	NA	38.21	40900.0	mg/kg

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Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW/EL	Unit
BY38-009	749099.026	2082522.941	0.5	2.5	Uranium-234	5.00	NA	2.64	300.0	pCi/g
BY38-009	749099.026	2082522.941	0.5	2.5	Uranium-235	0.20	NA	0.12	8.0	pCi/g
BY38-009	749099.026	2082522.941	0.5	2.5	Uranium-238	5.00	NA	1.49	351.0	pCi/g
BY38-010	749077.510	2082523.893	0.5	2.5	Barium	653.00	NA	289.38	26400.0	mg/kg
BY38-010	749077.510	2082523.893	0.5	2.5	Copper	96.00	NA	38.21	40900.0	mg/kg
BY38-010	749077.510	2082523.893	0.5	2.5	Pyrene	73.00	42.00	NA	22100000.0	ug/kg
BY38-010	749077.510	2082523.893	0.5	2.5	Uranium-235	0.20	NA	0.12	8.0	pCi/g
BY38-010	749077.510	2082523.893	0.5	2.5	Uranium-238	2.00	NA	1.49	351.0	pCi/g
BY38-010	749077.510	2082523.893	0.5	2.5	Vanadium	90.50	NA	88.49	7150.0	mg/kg
BY38-011	749131.623	2082416.427	0.5	2.5	Fluoranthene	53.00	43.00	NA	27200000.0	ug/kg
BY38-011	749131.623	2082416.427	0.5	2.5	Uranium-235	0.18	NA	0.12	8.0	pCi/g
BY38-011	749131.623	2082416.427	4.5	6.5	Benzo(a)anthracene	44.00	42.00	NA	34900.0	ug/kg
BY38-011	749131.623	2082416.427	4.5	6.5	Chrysene	51.00	37.00	NA	3490000.0	ug/kg
BY38-011	749131.623	2082416.427	4.5	6.5	Fluoranthene	100.00	42.00	NA	27200000.0	ug/kg
BY38-011	749131.623	2082416.427	4.5	6.5	Pyrene	110.00	60.00	NA	22100000.0	ug/kg
BY38-011	749131.623	2082416.427	4.5	6.5	Uranium-235	0.17	NA	0.12	8.0	pCi/g
BY39-000	749168.077	2082368.798	0.0	0.5	Aluminum	18600.00	NA	16902.00	228000.0	mg/kg
BY39-000	749168.077	2082368.798	0.0	0.5	Benzo(a)anthracene	61.00	42.00	NA	34900.0	ug/kg
BY39-000	749168.077	2082368.798	0.0	0.5	Chromium	17.00	NA	16.99	268.0	mg/kg
BY39-000	749168.077	2082368.798	0.0	0.5	Chrysene	75.00	57.00	NA	3490000.0	ug/kg
BY39-000	749168.077	2082368.798	0.0	0.5	Fluoranthene	160.00	90.00	NA	27200000.0	ug/kg
BY39-000	749168.077	2082368.798	0.0	0.5	Lithium	12.30	NA	11.55	20400.0	mg/kg
BY39-000	749168.077	2082368.798	0.0	0.5	Pyrene	130.00	43.00	NA	22100000.0	ug/kg
BY39-000	749168.077	2082368.798	0.0	0.5	Uranium-235	0.16	NA	0.09	8.0	pCi/g
BY39-000	749168.077	2082368.798	0.0	0.5	Uranium-238	2.10	NA	2.00	351.0	pCi/g
BY39-000	749168.077	2082368.798	0.5	2.5	Chrysene	60.00	59.00	NA	3490000.0	ug/kg
BY39-000	749168.077	2082368.798	0.5	2.5	Uranium-238	1.84	NA	1.49	351.0	pCi/g
BY39-001	749203.618	2082366.949	0.0	0.5	Pyrene	81.00	43.00	NA	22100000.0	ug/kg
BY39-001	749203.618	2082366.949	0.0	0.5	Strontium	54.50	NA	48.94	613000.0	mg/kg

Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW-EL	Units
BY39-001	749203.618	2082366.949	0.0	0.5	Uranium-234	2.55	NA	2.25	300.0	pCi/g
BY39-001	749203.618	2082366.949	0.0	0.5	Uranium-238	2.55	NA	2.00	351.0	pCi/g
BY39-001	749203.618	2082366.949	0.5	2.5	Pyrene	57.00	41.00	NA	22100000.0	ug/kg
BY39-001	749203.618	2082366.949	0.5	2.5	Tetrachloroethene	1.50	1.10	NA	615000.0	ug/kg
BY39-001	749203.618	2082366.949	0.5	2.5	Uranium-238	1.81	NA	1.49	351.0	pCi/g
BY39-002	749239.810	2082364.890	0.0	0.5	2-Methylnaphthalene	220.00	63.00	NA	20400000.0	ug/kg
BY39-002	749239.810	2082364.890	0.0	0.5	Acenaphthene	800.00	49.00	NA	40800000.0	ug/kg
BY39-002	749239.810	2082364.890	0.0	0.5	Aluminum	17900.00	NA	16902.00	228000.0	mg/kg
BY39-002	749239.810	2082364.890	0.0	0.5	Anthracene	940.00	84.00	NA	204000000.0	ug/kg
BY39-002	749239.810	2082364.890	0.0	0.5	Benzo(a)anthracene	1300.00	42.00	NA	34900.0	ug/kg
BY39-002	749239.810	2082364.890	0.0	0.5	Benzo(a)pyrene	1000.00	100.00	NA	3490.0	ug/kg
BY39-002	749239.810	2082364.890	0.0	0.5	Benzo(b)fluoranthene	800.00	110.00	NA	34900.0	ug/kg
BY39-002	749239.810	2082364.890	0.0	0.5	Benzo(k)fluoranthene	850.00	100.00	NA	349000.0	ug/kg
BY39-002	749239.810	2082364.890	0.0	0.5	Chrysene	1300.00	57.00	NA	3490000.0	ug/kg
BY39-002	749239.810	2082364.890	0.0	0.5	Dibenzofuran	370.00	88.00	NA	2950000.0	ug/kg
BY39-002	749239.810	2082364.890	0.0	0.5	Fluoranthene	2900.00	90.00	NA	27200000.0	ug/kg
BY39-002	749239.810	2082364.890	0.0	0.5	Fluorene	690.00	82.00	NA	40800000.0	ug/kg
BY39-002	749239.810	2082364.890	0.0	0.5	Indeno(1,2,3-cd)pyrene	620.00	52.00	NA	34900.0	ug/kg
BY39-002	749239.810	2082364.890	0.0	0.5	Lithium	11.80	NA	11.55	20400.0	mg/kg
BY39-002	749239.810	2082364.890	0.0	0.5	Naphthalene	690.00	75.00	NA	3090000.0	ug/kg
BY39-002	749239.810	2082364.890	0.0	0.5	Pyrene	2900.00	43.00	NA	22100000.0	ug/kg
BY39-002	749239.810	2082364.890	0.0	0.5	Strontium	49.30	NA	48.94	613000.0	mg/kg
BY39-002	749239.810	2082364.890	0.0	0.5	Uranium-234	6.00	NA	2.25	300.0	pCi/g
BY39-002	749239.810	2082364.890	0.0	0.5	Uranium-238	6.00	NA	2.00	351.0	pCi/g
BY39-002	749239.810	2082364.890	0.5	2.5	Uranium-234	4.00	NA	2.64	300.0	pCi/g
BY39-002	749239.810	2082364.890	0.5	2.5	Uranium-235	0.40	NA	0.12	8.0	pCi/g
BY39-002	749239.810	2082364.890	0.5	2.5	Uranium-238	4.00	NA	1.49	351.0	pCi/g
BY39-003	749275.404	2082363.414	0.0	0.5	Acenaphthene	120.00	47.00	NA	40800000.0	ug/kg
BY39-003	749275.404	2082363.414	0.0	0.5	Anthracene	120.00	80.00	NA	204000000.0	ug/kg

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Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AL	Unit
BY39-003	749275.404	2082363.414	0.0	0.5	Benzo(a)anthracene	230.00	40.00	NA	34900.0	ug/kg
BY39-003	749275.404	2082363.414	0.0	0.5	Benzo(a)pyrene	240.00	97.00	NA	3490.0	ug/kg
BY39-003	749275.404	2082363.414	0.0	0.5	Benzo(b)fluoranthene	170.00	100.00	NA	34900.0	ug/kg
BY39-003	749275.404	2082363.414	0.0	0.5	Benzo(k)fluoranthene	220.00	96.00	NA	349000.0	ug/kg
BY39-003	749275.404	2082363.414	0.0	0.5	Chrysene	250.00	55.00	NA	3490000.0	ug/kg
BY39-003	749275.404	2082363.414	0.0	0.5	Dibenz(a,h)anthracene	83.00	48.00	NA	3490.0	ug/kg
BY39-003	749275.404	2082363.414	0.0	0.5	Fluoranthene	570.00	86.00	NA	27200000.0	ug/kg
BY39-003	749275.404	2082363.414	0.0	0.5	Fluorene	90.00	78.00	NA	40800000.0	ug/kg
BY39-003	749275.404	2082363.414	0.0	0.5	Indeno(1,2,3-cd)pyrene	180.00	49.00	NA	34900.0	ug/kg
BY39-003	749275.404	2082363.414	0.0	0.5	Pyrene	540.00	41.00	NA	22100000.0	ug/kg
BY39-003	749275.404	2082363.414	0.5	2.5	2-Butanone	5.10	5.00	NA	192000000.0	ug/kg
BY39-003	749275.404	2082363.414	0.5	2.5	2-Methylnaphthalene	230.00	64.00	NA	20400000.0	ug/kg
BY39-003	749275.404	2082363.414	0.5	2.5	Acenaphthene	1200.00	50.00	NA	40800000.0	ug/kg
BY39-003	749275.404	2082363.414	0.5	2.5	Anthracene	1600.00	84.00	NA	204000000.0	ug/kg
BY39-003	749275.404	2082363.414	0.5	2.5	Benzo(a)anthracene	3800.00	42.00	NA	34900.0	ug/kg
BY39-003	749275.404	2082363.414	0.5	2.5	Benzo(a)pyrene	3500.00	100.00	NA	3490.0	ug/kg
BY39-003	749275.404	2082363.414	0.5	2.5	Benzo(b)fluoranthene	2800.00	110.00	NA	34900.0	ug/kg
BY39-003	749275.404	2082363.414	0.5	2.5	Benzo(k)fluoranthene	2900.00	100.00	NA	349000.0	ug/kg
BY39-003	749275.404	2082363.414	0.5	2.5	Chrysene	4100.00	57.00	NA	3490000.0	ug/kg
BY39-003	749275.404	2082363.414	0.5	2.5	Dibenz(a,h)anthracene	1100.00	51.00	NA	3490.0	ug/kg
BY39-003	749275.404	2082363.414	0.5	2.5	Dibenzofuran	480.00	88.00	NA	2950000.0	ug/kg
BY39-003	749275.404	2082363.414	0.5	2.5	Fluoranthene	9600.00	180.00	NA	27200000.0	ug/kg
BY39-003	749275.404	2082363.414	0.5	2.5	Fluorene	930.00	82.00	NA	40800000.0	ug/kg
BY39-003	749275.404	2082363.414	0.5	2.5	Indeno(1,2,3-cd)pyrene	2500.00	52.00	NA	34900.0	ug/kg
BY39-003	749275.404	2082363.414	0.5	2.5	Lead	36.60	NA	24.97	1000.0	mg/kg
BY39-003	749275.404	2082363.414	0.5	2.5	Methylene chloride	2.20	0.86	NA	2530000.0	ug/kg
BY39-003	749275.404	2082363.414	0.5	2.5	Naphthalene	570.00	76.00	NA	3090000.0	ug/kg
BY39-003	749275.404	2082363.414	0.5	2.5	Pyrene	8600.00	86.00	NA	22100000.0	ug/kg
BY39-004	749187.401	2082398.534	0.0	0.5	Aluminum	21400.00	NA	16902.00	228000.0	mg/kg

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Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AL	Unit
BY39-004	749187.401	2082398.534	0.0	0.5	Benzo(a)anthracene	96.00	41.00	NA	34900.0	ug/kg
BY39-004	749187.401	2082398.534	0.0	0.5	Benzo(a)pyrene	110.00	98.00	NA	3490.0	ug/kg
BY39-004	749187.401	2082398.534	0.0	0.5	Benzo(k)fluoranthene	100.00	97.00	NA	349000.0	ug/kg
BY39-004	749187.401	2082398.534	0.0	0.5	bis(2-Ethylhexyl)phthalate	160.00	72.00	NA	1970000.0	ug/kg
BY39-004	749187.401	2082398.534	0.0	0.5	Chromium	22.30	NA	16.99	268.0	mg/kg
BY39-004	749187.401	2082398.534	0.0	0.5	Chrysene	120.00	56.00	NA	3490000.0	ug/kg
BY39-004	749187.401	2082398.534	0.0	0.5	Copper	20.60	NA	18.06	40900.0	mg/kg
BY39-004	749187.401	2082398.534	0.0	0.5	Fluoranthene	210.00	88.00	NA	27200000.0	ug/kg
BY39-004	749187.401	2082398.534	0.0	0.5	Indeno(1,2,3-cd)pyrene	63.00	50.00	NA	34900.0	ug/kg
BY39-004	749187.401	2082398.534	0.0	0.5	Iron	18500.00	NA	18037.00	307000.0	mg/kg
BY39-004	749187.401	2082398.534	0.0	0.5	Lithium	13.30	NA	11.55	20400.0	mg/kg
BY39-004	749187.401	2082398.534	0.0	0.5	Nickel	15.60	NA	14.91	20400.0	mg/kg
BY39-004	749187.401	2082398.534	0.0	0.5	Pyrene	190.00	42.00	NA	22100000.0	ug/kg
BY39-004	749187.401	2082398.534	0.0	0.5	Strontium	59.40	NA	48.94	613000.0	mg/kg
BY39-004	749187.401	2082398.534	0.0	0.5	Uranium-235	0.19	NA	0.09	8.0	pCi/g
BY39-004	749187.401	2082398.534	0.0	0.5	Vanadium	56.40	NA	45.59	7150.0	mg/kg
BY39-004	749187.401	2082398.534	0.5	2.5	Benzo(a)anthracene	110.00	44.00	NA	34900.0	ug/kg
BY39-004	749187.401	2082398.534	0.5	2.5	Chrysene	130.00	60.00	NA	3490000.0	ug/kg
BY39-004	749187.401	2082398.534	0.5	2.5	Fluoranthene	300.00	94.00	NA	27200000.0	ug/kg
BY39-004	749187.401	2082398.534	0.5	2.5	Indeno(1,2,3-cd)pyrene	56.00	54.00	NA	34900.0	ug/kg
BY39-004	749187.401	2082398.534	0.5	2.5	Pyrene	270.00	45.00	NA	22100000.0	ug/kg
BY39-004	749187.401	2082398.534	0.5	2.5	Toluene	0.94	0.89	NA	31300000.0	ug/kg
BY39-004	749187.401	2082398.534	0.5	2.5	Uranium-234	3.16	NA	2.64	300.0	pCi/g
BY39-004	749187.401	2082398.534	0.5	2.5	Uranium-235	0.21	NA	0.12	8.0	pCi/g
BY39-004	749187.401	2082398.534	0.5	2.5	Uranium-238	3.16	NA	1.49	351.0	pCi/g
BY39-005	749223.286	2082398.066	0.0	0.5	Aluminum	21400.00	NA	16902.00	228000.0	mg/kg
BY39-005	749223.286	2082398.066	0.0	0.5	Benzo(a)anthracene	76.00	42.00	NA	34900.0	ug/kg
BY39-005	749223.286	2082398.066	0.0	0.5	Chromium	20.00	NA	16.99	268.0	mg/kg
BY39-005	749223.286	2082398.066	0.0	0.5	Chrysene	83.00	57.00	NA	3490000.0	ug/kg

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Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRWAL	Unit
BY39-005	749223.286	2082398.066	0.0	0.5	Fluoranthene	180.00	90.00	NA	27200000.0	ug/kg
BY39-005	749223.286	2082398.066	0.0	0.5	Lithium	14.00	NA	11.55	20400.0	mg/kg
BY39-005	749223.286	2082398.066	0.0	0.5	Nickel	15.40	NA	14.91	20400.0	mg/kg
BY39-005	749223.286	2082398.066	0.0	0.5	Pyrene	180.00	43.00	NA	22100000.0	ug/kg
BY39-005	749223.286	2082398.066	0.0	0.5	Uranium-235	0.23	NA	0.09	8.0	pCi/g
BY39-005	749223.286	2082398.066	0.0	0.5	Vanadium	46.80	NA	45.59	7150.0	mg/kg
BY39-005	749223.286	2082398.066	0.5	2.5	Benzo(a)anthracene	83.00	42.00	NA	34900.0	ug/kg
BY39-005	749223.286	2082398.066	0.5	2.5	Chrysene	88.00	57.00	NA	3490000.0	ug/kg
BY39-005	749223.286	2082398.066	0.5	2.5	Fluoranthene	220.00	90.00	NA	27200000.0	ug/kg
BY39-005	749223.286	2082398.066	0.5	2.5	Indeno(1,2,3-cd)pyrene	57.00	51.00	NA	34900.0	ug/kg
BY39-005	749223.286	2082398.066	0.5	2.5	Pyrene	210.00	43.00	NA	22100000.0	ug/kg
BY39-005	749223.286	2082398.066	0.5	2.5	Toluene	0.89	0.85	NA	31300000.0	ug/kg
BY39-005	749223.286	2082398.066	0.5	2.5	Uranium-235	0.13	NA	0.12	8.0	pCi/g
BY39-005	749223.286	2082398.066	0.5	2.5	Uranium-238	2.08	NA	1.49	351.0	pCi/g
BY39-006	749259.269	2082395.199	0.0	0.5	Acenaphthene	57.00	52.00	NA	40800000.0	ug/kg
BY39-006	749259.269	2082395.199	0.0	0.5	Anthracene	160.00	88.00	NA	204000000.0	ug/kg
BY39-006	749259.269	2082395.199	0.0	0.5	Benzo(a)anthracene	640.00	44.00	NA	34900.0	ug/kg
BY39-006	749259.269	2082395.199	0.0	0.5	Benzo(a)pyrene	670.00	110.00	NA	3490.0	ug/kg
BY39-006	749259.269	2082395.199	0.0	0.5	Benzo(b)fluoranthene	510.00	110.00	NA	34900.0	ug/kg
BY39-006	749259.269	2082395.199	0.0	0.5	Benzo(k)fluoranthene	540.00	100.00	NA	349000.0	ug/kg
BY39-006	749259.269	2082395.199	0.0	0.5	Chrysene	670.00	60.00	NA	3490000.0	ug/kg
BY39-006	749259.269	2082395.199	0.0	0.5	Fluoranthene	1200.00	95.00	NA	27200000.0	ug/kg
BY39-006	749259.269	2082395.199	0.0	0.5	Indeno(1,2,3-cd)pyrene	420.00	54.00	NA	34900.0	ug/kg
BY39-006	749259.269	2082395.199	0.0	0.5	Pyrene	1300.00	45.00	NA	22100000.0	ug/kg
BY39-006	749259.269	2082395.199	0.0	0.5	Uranium-235	0.18	NA	0.09	8.0	pCi/g
BY39-006	749259.269	2082395.199	0.5	0.8	Benzo(a)anthracene	180.00	44.00	NA	34900.0	ug/kg
BY39-006	749259.269	2082395.199	0.5	0.8	Benzo(a)pyrene	200.00	110.00	NA	3490.0	ug/kg
BY39-006	749259.269	2082395.199	0.5	0.8	Benzo(b)fluoranthene	150.00	110.00	NA	34900.0	ug/kg
BY39-006	749259.269	2082395.199	0.5	0.8	Benzo(k)fluoranthene	170.00	100.00	NA	349000.0	ug/kg

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Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AL	Unit
BY39-006	749259.269	2082395.199	0.5	0.8	Chrysene	200.00	60.00	NA	3490000.0	ug/kg
BY39-006	749259.269	2082395.199	0.5	0.8	Fluoranthene	340.00	94.00	NA	27200000.0	ug/kg
BY39-006	749259.269	2082395.199	0.5	0.8	Pyrene	360.00	45.00	NA	22100000.0	ug/kg
BY39-006	749259.269	2082395.199	0.5	0.8	Uranium-234	3.86	NA	2.64	300.0	pCi/g
BY39-006	749259.269	2082395.199	0.5	0.8	Uranium-235	0.17	NA	0.12	8.0	pCi/g
BY39-006	749259.269	2082395.199	0.5	0.8	Uranium-238	3.86	NA	1.49	351.0	pCi/g
BY39-007	749278.722	2082425.534	0.0	0.5	Acenaphthene	110.00	46.00	NA	40800000.0	ug/kg
BY39-007	749278.722	2082425.534	0.0	0.5	Anthracene	98.00	78.00	NA	20400000.0	ug/kg
BY39-007	749278.722	2082425.534	0.0	0.5	Benzo(a)anthracene	300.00	39.00	NA	34900.0	ug/kg
BY39-007	749278.722	2082425.534	0.0	0.5	Benzo(a)pyrene	290.00	94.00	NA	3490.0	ug/kg
BY39-007	749278.722	2082425.534	0.0	0.5	Benzo(b)fluoranthene	270.00	100.00	NA	34900.0	ug/kg
BY39-007	749278.722	2082425.534	0.0	0.5	Benzo(k)fluoranthene	230.00	93.00	NA	349000.0	ug/kg
BY39-007	749278.722	2082425.534	0.0	0.5	Chrysene	310.00	53.00	NA	3490000.0	ug/kg
BY39-007	749278.722	2082425.534	0.0	0.5	Fluoranthene	640.00	84.00	NA	27200000.0	ug/kg
BY39-007	749278.722	2082425.534	0.0	0.5	Fluorene	80.00	76.00	NA	40800000.0	ug/kg
BY39-007	749278.722	2082425.534	0.0	0.5	Indeno(1,2,3-cd)pyrene	200.00	48.00	NA	34900.0	ug/kg
BY39-007	749278.722	2082425.534	0.0	0.5	Pyrene	670.00	40.00	NA	22100000.0	ug/kg
BY39-007	749278.722	2082425.534	0.5	1.5	Benzo(a)anthracene	120.00	40.00	NA	34900.0	ug/kg
BY39-007	749278.722	2082425.534	0.5	1.5	Benzo(a)pyrene	170.00	96.00	NA	3490.0	ug/kg
BY39-007	749278.722	2082425.534	0.5	1.5	Benzo(b)fluoranthene	130.00	100.00	NA	34900.0	ug/kg
BY39-007	749278.722	2082425.534	0.5	1.5	Benzo(k)fluoranthene	130.00	95.00	NA	349000.0	ug/kg
BY39-007	749278.722	2082425.534	0.5	1.5	Chrysene	140.00	54.00	NA	3490000.0	ug/kg
BY39-007	749278.722	2082425.534	0.5	1.5	Fluoranthene	330.00	86.00	NA	27200000.0	ug/kg
BY39-007	749278.722	2082425.534	0.5	1.5	Indeno(1,2,3-cd)pyrene	91.00	49.00	NA	34900.0	ug/kg
BY39-007	749278.722	2082425.534	0.5	1.5	Lead	25.20	NA	24.97	1000.0	mg/kg
BY39-007	749278.722	2082425.534	0.5	1.5	Pyrene	280.00	41.00	NA	22100000.0	ug/kg
BY39-007	749278.722	2082425.534	0.5	1.5	Tetrachloroethene	4.10	1.00	NA	615000.0	ug/kg
BY39-007	749278.722	2082425.534	0.5	1.5	Toluene	1.50	0.81	NA	31300000.0	ug/kg
BY39-008	749262.227	2082457.451	0.0	0.5	Aluminum	18100.00	NA	16902.00	228000.0	mg/kg

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Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RUL	Background	WRWAL	Unit
BY39-008	749262.227	2082457.451	0.0	0.5	Benzo(a)anthracene	85.00	41.00	NA	34900.0	ug/kg
BY39-008	749262.227	2082457.451	0.0	0.5	Chrysene	100.00	56.00	NA	3490000.0	ug/kg
BY39-008	749262.227	2082457.451	0.0	0.5	Fluoranthene	200.00	89.00	NA	27200000.0	ug/kg
BY39-008	749262.227	2082457.451	0.0	0.5	Indeno(1,2,3-cd)pyrene	66.00	51.00	NA	34900.0	ug/kg
BY39-008	749262.227	2082457.451	0.0	0.5	Lithium	12.50	NA	11.55	20400.0	mg/kg
BY39-008	749262.227	2082457.451	0.0	0.5	Pyrene	170.00	42.00	NA	22100000.0	ug/kg
BY39-008	749262.227	2082457.451	0.0	0.5	Uranium-235	0.19	NA	0.09	8.0	pCi/g
BY39-008	749262.227	2082457.451	0.5	1.3	Acetone	6.50	4.90	NA	102000000.0	ug/kg
BY39-008	749262.227	2082457.451	0.5	1.3	Benzo(a)anthracene	80.00	41.00	NA	34900.0	ug/kg
BY39-008	749262.227	2082457.451	0.5	1.3	Chrysene	95.00	56.00	NA	3490000.0	ug/kg
BY39-008	749262.227	2082457.451	0.5	1.3	Fluoranthene	190.00	88.00	NA	27200000.0	ug/kg
BY39-008	749262.227	2082457.451	0.5	1.3	Indeno(1,2,3-cd)pyrene	62.00	51.00	NA	34900.0	ug/kg
BY39-008	749262.227	2082457.451	0.5	1.3	Pyrene	180.00	42.00	NA	22100000.0	ug/kg
BY39-008	749262.227	2082457.451	0.5	1.3	Uranium-235	0.20	NA	0.12	8.0	pCi/g
BY39-009	749167.970	2082368.310	0.0	0.5	Acenaphthene	47.00	46.00	NA	40800000.0	ug/kg
BY39-009	749167.970	2082368.310	0.0	0.5	Anthracene	620.00	78.00	NA	204000000.0	ug/kg
BY39-009	749167.970	2082368.310	0.0	0.5	Antimony	0.58	NA	0.47	409.0	mg/kg
BY39-009	749167.970	2082368.310	0.0	0.5	Benzo(a)anthracene	520.00	39.00	NA	34900.0	ug/kg
BY39-009	749167.970	2082368.310	0.0	0.5	Benzo(a)pyrene	590.00	94.00	NA	3490.0	ug/kg
BY39-009	749167.970	2082368.310	0.0	0.5	Benzo(b)fluoranthene	530.00	100.00	NA	34900.0	ug/kg
BY39-009	749167.970	2082368.310	0.0	0.5	Benzo(k)fluoranthene	440.00	93.00	NA	349000.0	ug/kg
BY39-009	749167.970	2082368.310	0.0	0.5	Chromium	17.10	NA	16.99	268.0	mg/kg
BY39-009	749167.970	2082368.310	0.0	0.5	Chrysene	610.00	53.00	NA	3490000.0	ug/kg
BY39-009	749167.970	2082368.310	0.0	0.5	Dibenz(a,h)anthracene	150.00	47.00	NA	3490.0	ug/kg
BY39-009	749167.970	2082368.310	0.0	0.5	Fluoranthene	960.00	84.00	NA	27200000.0	ug/kg
BY39-009	749167.970	2082368.310	0.0	0.5	Indeno(1,2,3-cd)pyrene	350.00	48.00	NA	34900.0	ug/kg
BY39-009	749167.970	2082368.310	0.0	0.5	Lead	56.30	NA	54.62	1000.0	mg/kg
BY39-009	749167.970	2082368.310	0.0	0.5	Pyrene	990.00	40.00	NA	22100000.0	ug/kg
BY39-009	749167.970	2082368.310	0.5	1.3	Acenaphthene	130.00	47.00	NA	40800000.0	ug/kg

Location Code	Northing	Eastings	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AL	Unit
BY39-009	749167.970	2082368.310	0.5	1.3	Anthracene	170.00	79.00	NA	204000000.0	ug/kg
BY39-009	749167.970	2082368.310	0.5	1.3	Benzo(a)anthracene	470.00	40.00	NA	34900.0	ug/kg
BY39-009	749167.970	2082368.310	0.5	1.3	Benzo(a)pyrene	520.00	96.00	NA	3490.0	ug/kg
BY39-009	749167.970	2082368.310	0.5	1.3	Benzo(b)fluoranthene	340.00	100.00	NA	34900.0	ug/kg
BY39-009	749167.970	2082368.310	0.5	1.3	Benzo(k)fluoranthene	480.00	95.00	NA	349000.0	ug/kg
BY39-009	749167.970	2082368.310	0.5	1.3	Chrysene	530.00	54.00	NA	3490000.0	ug/kg
BY39-009	749167.970	2082368.310	0.5	1.3	Fluoranthene	1100.00	85.00	NA	27200000.0	ug/kg
BY39-009	749167.970	2082368.310	0.5	1.3	Fluorene	110.00	77.00	NA	40800000.0	ug/kg
BY39-009	749167.970	2082368.310	0.5	1.3	Indeno(1,2,3-cd)pyrene	340.00	49.00	NA	34900.0	ug/kg
BY39-009	749167.970	2082368.310	0.5	1.3	Lead	69.70	NA	24.97	1000.0	mg/kg
BY39-009	749167.970	2082368.310	0.5	1.3	Pyrene	1000.00	41.00	NA	22100000.0	ug/kg
BY39-009	749167.970	2082368.310	0.5	1.3	Tetrachloroethene	1.30	1.00	NA	615000.0	ug/kg
BY39-010	749265.264	2082519.711	0.0	0.5	Acenaphthene	120.00	48.00	NA	40800000.0	ug/kg
BY39-010	749265.264	2082519.711	0.0	0.5	Anthracene	140.00	81.00	NA	204000000.0	ug/kg
BY39-010	749265.264	2082519.711	0.0	0.5	Benzo(a)anthracene	280.00	41.00	NA	34900.0	ug/kg
BY39-010	749265.264	2082519.711	0.0	0.5	Benzo(a)pyrene	320.00	98.00	NA	3490.0	ug/kg
BY39-010	749265.264	2082519.711	0.0	0.5	Benzo(b)fluoranthene	230.00	100.00	NA	34900.0	ug/kg
BY39-010	749265.264	2082519.711	0.0	0.5	Benzo(k)fluoranthene	290.00	97.00	NA	349000.0	ug/kg
BY39-010	749265.264	2082519.711	0.0	0.5	bis(2-Ethylhexyl)phthalate	270.00	72.00	NA	1970000.0	ug/kg
BY39-010	749265.264	2082519.711	0.0	0.5	Chrysene	330.00	55.00	NA	3490000.0	ug/kg
BY39-010	749265.264	2082519.711	0.0	0.5	Dibenz(a,h)anthracene	92.00	49.00	NA	3490.0	ug/kg
BY39-010	749265.264	2082519.711	0.0	0.5	Fluoranthene	830.00	87.00	NA	27200000.0	ug/kg
BY39-010	749265.264	2082519.711	0.0	0.5	Fluorene	84.00	79.00	NA	40800000.0	ug/kg
BY39-010	749265.264	2082519.711	0.0	0.5	Indeno(1,2,3-cd)pyrene	190.00	50.00	NA	34900.0	ug/kg
BY39-010	749265.264	2082519.711	0.0	0.5	Pyrene	660.00	42.00	NA	22100000.0	ug/kg
BY39-010	749265.264	2082519.711	0.5	0.7	Acenaphthene	59.00	53.00	NA	40800000.0	ug/kg
BY39-010	749265.264	2082519.711	0.5	0.7	Benzo(a)anthracene	130.00	45.00	NA	34900.0	ug/kg
BY39-010	749265.264	2082519.711	0.5	0.7	Benzo(a)pyrene	130.00	110.00	NA	3490.0	ug/kg
BY39-010	749265.264	2082519.711	0.5	0.7	Benzo(k)fluoranthene	120.00	110.00	NA	349000.0	ug/kg

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AL	Unit
BY39-010	749265.264	2082519.711	0.5	0.7	Chrysene	150.00	61.00	NA	3490000.0	ug/kg
BY39-010	749265.264	2082519.711	0.5	0.7	Fluoranthene	360.00	97.00	NA	27200000.0	ug/kg
BY39-010	749265.264	2082519.711	0.5	0.7	Indeno(1,2,3-cd)pyrene	64.00	55.00	NA	34900.0	ug/kg
BY39-010	749265.264	2082519.711	0.5	0.7	Pyrene	300.00	46.00	NA	22100000.0	ug/kg
BZ38-000	749086.603	2082553.622	0.5	2.5	Barium	639.00	NA	289.38	26400.0	mg/kg
BZ38-000	749086.603	2082553.622	0.5	2.5	Copper	78.80	NA	38.21	40900.0	mg/kg
BZ38-000	749086.603	2082553.622	0.5	2.5	Uranium-234	5.00	NA	2.64	300.0	pCi/g
BZ38-000	749086.603	2082553.622	0.5	2.5	Uranium-238	5.00	NA	1.49	351.0	pCi/g
BZ38-000	749086.603	2082553.622	0.5	2.5	Vanadium	100.00	NA	88.49	7150.0	mg/kg
BZ38-001	749071.128	2082553.045	0.5	2.5	Barium	702.00	NA	289.38	26400.0	mg/kg
BZ38-001	749071.128	2082553.045	0.5	2.5	Copper	93.70	NA	38.21	40900.0	mg/kg
BZ38-001	749071.128	2082553.045	0.5	2.5	Iron	44200.00	NA	41046.52	307000.0	mg/kg
BZ38-001	749071.128	2082553.045	0.5	2.5	Uranium-234	5.16	NA	2.64	300.0	pCi/g
BZ38-001	749071.128	2082553.045	0.5	2.5	Uranium-238	5.16	NA	1.49	351.0	pCi/g
BZ38-001	749071.128	2082553.045	0.5	2.5	Vanadium	115.00	NA	88.49	7150.0	mg/kg
BZ38-001	749071.128	2082553.045	0.5	2.5	Zinc	289.00	NA	139.10	307000.0	mg/kg
BZ39-000	749258.728	2082548.286	0.0	0.5	2-Methylnaphthalene	210.00	60.00	NA	20400000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.0	0.5	Acenaphthene	750.00	47.00	NA	40800000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.0	0.5	Aluminum	23000.00	NA	16902.00	228000.0	mg/kg
BZ39-000	749258.728	2082548.286	0.0	0.5	Anthracene	910.00	79.00	NA	204000000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.0	0.5	Benzo(a)anthracene	1200.00	40.00	NA	34900.0	ug/kg
BZ39-000	749258.728	2082548.286	0.0	0.5	Benzo(a)pyrene	1000.00	96.00	NA	3490.0	ug/kg
BZ39-000	749258.728	2082548.286	0.0	0.5	Benzo(b)fluoranthene	1100.00	100.00	NA	34900.0	ug/kg
BZ39-000	749258.728	2082548.286	0.0	0.5	Benzo(k)fluoranthene	990.00	95.00	NA	349000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.0	0.5	Chromium	26.00	NA	16.99	268.0	mg/kg
BZ39-000	749258.728	2082548.286	0.0	0.5	Chrysene	1200.00	54.00	NA	3490000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.0	0.5	Dibenz(a,h)anthracene	280.00	48.00	NA	3490.0	ug/kg
BZ39-000	749258.728	2082548.286	0.0	0.5	Dibenzofuran	370.00	83.00	NA	2950000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.0	0.5	Fluoranthene	4100.00	86.00	NA	27200000.0	ug/kg

Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL (ft)	Background	WRW-AB	Unit
BZ39-000	749258.728	2082548.286	0.0	0.5	Fluorene	600.00	77.00	NA	40800000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.0	0.5	Indeno(1,2,3-cd)pyrene	650.00	49.00	NA	34900.0	ug/kg
BZ39-000	749258.728	2082548.286	0.0	0.5	Iron	20300.00	NA	18037.00	307000.0	mg/kg
BZ39-000	749258.728	2082548.286	0.0	0.5	Lithium	14.40	NA	11.55	20400.0	mg/kg
BZ39-000	749258.728	2082548.286	0.0	0.5	Naphthalene	690.00	71.00	NA	3090000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.0	0.5	Nickel	18.20	NA	14.91	20400.0	mg/kg
BZ39-000	749258.728	2082548.286	0.0	0.5	Pyrene	3000.00	41.00	NA	22100000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.0	0.5	Uranium-235	0.15	NA	0.09	8.0	pCi/g
BZ39-000	749258.728	2082548.286	0.5	0.7	2-Methylnaphthalene	80.00	61.00	NA	20400000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.5	0.7	Acenaphthene	330.00	47.00	NA	40800000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.5	0.7	Anthracene	680.00	80.00	NA	204000000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.5	0.7	Benzo(a)anthracene	1500.00	40.00	NA	34900.0	ug/kg
BZ39-000	749258.728	2082548.286	0.5	0.7	Benzo(a)pyrene	1400.00	97.00	NA	3490.0	ug/kg
BZ39-000	749258.728	2082548.286	0.5	0.7	Benzo(b)fluoranthene	1400.00	100.00	NA	34900.0	ug/kg
BZ39-000	749258.728	2082548.286	0.5	0.7	Benzo(k)fluoranthene	1300.00	96.00	NA	349000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.5	0.7	bis(2-Ethylhexyl)phthalate	110.00	71.00	NA	1970000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.5	0.7	Chrysene	1700.00	55.00	NA	3490000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.5	0.7	Dibenz(a,h)anthracene	420.00	48.00	NA	3490.0	ug/kg
BZ39-000	749258.728	2082548.286	0.5	0.7	Dibenzofuran	150.00	84.00	NA	2950000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.5	0.7	Ethylbenzene	12.00	1.20	NA	4250000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.5	0.7	Fluoranthene	3700.00	86.00	NA	27200000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.5	0.7	Fluorene	290.00	78.00	NA	40800000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.5	0.7	Indeno(1,2,3-cd)pyrene	900.00	49.00	NA	34900.0	ug/kg
BZ39-000	749258.728	2082548.286	0.5	0.7	Lead	29.90	NA	24.97	1000.0	mg/kg
BZ39-000	749258.728	2082548.286	0.5	0.7	Naphthalene	250.00	72.00	NA	3090000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.5	0.7	Pyrene	3000.00	41.00	NA	22100000.0	ug/kg
BZ39-000	749258.728	2082548.286	0.5	0.7	Uranium-235	0.16	NA	0.12	8.0	pCi/g
BZ39-000	749258.728	2082548.286	0.5	0.7	Uranium-238	1.58	NA	1.49	351.0	pCi/g
BZ39-000	749258.728	2082548.286	0.5	0.7	Xylene	67.00	2.80	NA	2040000.0	ug/kg

Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRAV-AL	Unit
BZ39-001	749257.286	2082581.652	0.0	0.5	Acenaphthene	170.00	47.00	NA	40800000.0	ug/kg
BZ39-001	749257.286	2082581.652	0.0	0.5	Anthracene	170.00	80.00	NA	204000000.0	ug/kg
BZ39-001	749257.286	2082581.652	0.0	0.5	Barium	185.00	NA	141.26	26400.0	mg/kg
BZ39-001	749257.286	2082581.652	0.0	0.5	Benzo(a)anthracene	260.00	40.00	NA	34900.0	ug/kg
BZ39-001	749257.286	2082581.652	0.0	0.5	Benzo(a)pyrene	290.00	96.00	NA	3490.0	ug/kg
BZ39-001	749257.286	2082581.652	0.0	0.5	Benzo(b)fluoranthene	240.00	100.00	NA	34900.0	ug/kg
BZ39-001	749257.286	2082581.652	0.0	0.5	Benzo(k)fluoranthene	220.00	95.00	NA	349000.0	ug/kg
BZ39-001	749257.286	2082581.652	0.0	0.5	Chrysene	290.00	54.00	NA	3490000.0	ug/kg
BZ39-001	749257.286	2082581.652	0.0	0.5	Dibenz(a,h)anthracene	88.00	48.00	NA	3490.0	ug/kg
BZ39-001	749257.286	2082581.652	0.0	0.5	Fluoranthene	850.00	86.00	NA	27200000.0	ug/kg
BZ39-001	749257.286	2082581.652	0.0	0.5	Fluorene	130.00	77.00	NA	40800000.0	ug/kg
BZ39-001	749257.286	2082581.652	0.0	0.5	Indeno(1,2,3-cd)pyrene	200.00	49.00	NA	34900.0	ug/kg
BZ39-001	749257.286	2082581.652	0.0	0.5	Lithium	11.90	NA	11.55	20400.0	mg/kg
BZ39-001	749257.286	2082581.652	0.0	0.5	Naphthalene	140.00	71.00	NA	3090000.0	ug/kg
BZ39-001	749257.286	2082581.652	0.0	0.5	Pyrene	710.00	41.00	NA	22100000.0	ug/kg
BZ39-001	749257.286	2082581.652	0.0	0.5	Uranium-234	2.44	NA	2.25	300.0	pCi/g
BZ39-001	749257.286	2082581.652	0.0	0.5	Uranium-238	2.44	NA	2.00	351.0	pCi/g
BZ39-001	749257.286	2082581.652	0.0	0.5	Zinc	84.80	NA	73.76	307000.0	mg/kg
BZ39-001	749257.286	2082581.652	0.5	0.7	Acenaphthene	120.00	48.00	NA	40800000.0	ug/kg
BZ39-001	749257.286	2082581.652	0.5	0.7	Anthracene	120.00	81.00	NA	204000000.0	ug/kg
BZ39-001	749257.286	2082581.652	0.5	0.7	Benzo(a)anthracene	290.00	40.00	NA	34900.0	ug/kg
BZ39-001	749257.286	2082581.652	0.5	0.7	Benzo(a)pyrene	300.00	98.00	NA	3490.0	ug/kg
BZ39-001	749257.286	2082581.652	0.5	0.7	Benzo(b)fluoranthene	260.00	100.00	NA	34900.0	ug/kg
BZ39-001	749257.286	2082581.652	0.5	0.7	Benzo(k)fluoranthene	250.00	97.00	NA	349000.0	ug/kg
BZ39-001	749257.286	2082581.652	0.5	0.7	Chrysene	320.00	55.00	NA	3490000.0	ug/kg
BZ39-001	749257.286	2082581.652	0.5	0.7	Fluoranthene	750.00	87.00	NA	27200000.0	ug/kg
BZ39-001	749257.286	2082581.652	0.5	0.7	Indeno(1,2,3-cd)pyrene	210.00	50.00	NA	34900.0	ug/kg
BZ39-001	749257.286	2082581.652	0.5	0.7	Pyrene	640.00	42.00	NA	22100000.0	ug/kg
BZ39-001	749257.286	2082581.652	0.5	0.7	Tetrachloroethene	1.50	1.10	NA	615000.0	ug/kg

Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRAWAL	Unit
BZ39-001	749257.286	2082581.652	0.5	0.7	Uranium-235	0.17	NA	0.12	8.0	pCi/g
BZ39-001	749257.286	2082581.652	0.5	0.7	Xylene	6.30	3.00	NA	2040000.0	ug/kg
BZ39-002	749257.553	2082613.132	0.0	0.5	Acenaphthene	190.00	46.00	NA	40800000.0	ug/kg
BZ39-002	749257.553	2082613.132	0.0	0.5	Americium-241	0.15	NA	0.02	76.0	pCi/g
BZ39-002	749257.553	2082613.132	0.0	0.5	Anthracene	200.00	78.00	NA	204000000.0	ug/kg
BZ39-002	749257.553	2082613.132	0.0	0.5	Benzo(a)anthracene	420.00	39.00	NA	34900.0	ug/kg
BZ39-002	749257.553	2082613.132	0.0	0.5	Benzo(a)pyrene	380.00	95.00	NA	3490.0	ug/kg
BZ39-002	749257.553	2082613.132	0.0	0.5	Benzo(b)fluoranthene	340.00	100.00	NA	34900.0	ug/kg
BZ39-002	749257.553	2082613.132	0.0	0.5	Benzo(k)fluoranthene	330.00	94.00	NA	349000.0	ug/kg
BZ39-002	749257.553	2082613.132	0.0	0.5	Chromium	21.10	NA	16.99	268.0	mg/kg
BZ39-002	749257.553	2082613.132	0.0	0.5	Chrysene	480.00	54.00	NA	3490000.0	ug/kg
BZ39-002	749257.553	2082613.132	0.0	0.5	Fluoranthene	1100.00	84.00	NA	27200000.0	ug/kg
BZ39-002	749257.553	2082613.132	0.0	0.5	Indeno(1,2,3-cd)pyrene	240.00	48.00	NA	34900.0	ug/kg
BZ39-002	749257.553	2082613.132	0.0	0.5	Lead	64.20	NA	54.62	1000.0	mg/kg
BZ39-002	749257.553	2082613.132	0.0	0.5	Plutonium-239/240	0.86	NA	0.07	50.0	pCi/g
BZ39-002	749257.553	2082613.132	0.0	0.5	Pyrene	970.00	40.00	NA	22100000.0	ug/kg
BZ39-002	749257.553	2082613.132	0.0	0.5	Uranium-235	0.12	NA	0.09	8.0	pCi/g
BZ39-002	749257.553	2082613.132	0.0	0.5	Zinc	76.90	NA	73.76	307000.0	mg/kg
BZ39-002	749257.553	2082613.132	0.5	0.8	Acenaphthene	150.00	46.00	NA	40800000.0	ug/kg
BZ39-002	749257.553	2082613.132	0.5	0.8	Anthracene	160.00	79.00	NA	204000000.0	ug/kg
BZ39-002	749257.553	2082613.132	0.5	0.8	Benzo(a)anthracene	340.00	39.00	NA	34900.0	ug/kg
BZ39-002	749257.553	2082613.132	0.5	0.8	Benzo(a)pyrene	360.00	95.00	NA	3490.0	ug/kg
BZ39-002	749257.553	2082613.132	0.5	0.8	Benzo(b)fluoranthene	280.00	100.00	NA	34900.0	ug/kg
BZ39-002	749257.553	2082613.132	0.5	0.8	Benzo(k)fluoranthene	300.00	94.00	NA	349000.0	ug/kg
BZ39-002	749257.553	2082613.132	0.5	0.8	Chrysene	430.00	54.00	NA	3490000.0	ug/kg
BZ39-002	749257.553	2082613.132	0.5	0.8	Ethylbenzene	6.90	1.20	NA	4250000.0	ug/kg
BZ39-002	749257.553	2082613.132	0.5	0.8	Fluoranthene	860.00	85.00	NA	27200000.0	ug/kg
BZ39-002	749257.553	2082613.132	0.5	0.8	Indeno(1,2,3-cd)pyrene	290.00	49.00	NA	34900.0	ug/kg
BZ39-002	749257.553	2082613.132	0.5	0.8	Lead	58.50	NA	24.97	1000.0	mg/kg

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Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AB	Unit
BZ39-002	749257.553	2082613.132	0.5	0.8	Pyrene	860.00	40.00	NA	22100000.0	ug/kg
BZ39-002	749257.553	2082613.132	0.5	0.8	Toluene	1.00	0.79	NA	31300000.0	ug/kg
BZ39-002	749257.553	2082613.132	0.5	0.8	Uranium-235	0.14	NA	0.12	8.0	pCi/g
BZ39-002	749257.553	2082613.132	0.5	0.8	Uranium-238	2.32	NA	1.49	351.0	pCi/g
BZ39-002	749257.553	2082613.132	0.5	0.8	Xylene	41.00	2.80	NA	2040000.0	ug/kg
BZ39-003	749257.365	2082642.644	0.0	0.5	Benzo(a)anthracene	190.00	41.00	NA	34900.0	ug/kg
BZ39-003	749257.365	2082642.644	0.0	0.5	Benzo(a)pyrene	200.00	98.00	NA	3490.0	ug/kg
BZ39-003	749257.365	2082642.644	0.0	0.5	Benzo(b)fluoranthene	160.00	100.00	NA	34900.0	ug/kg
BZ39-003	749257.365	2082642.644	0.0	0.5	Benzo(k)fluoranthene	170.00	97.00	NA	349000.0	ug/kg
BZ39-003	749257.365	2082642.644	0.0	0.5	Chromium	19.40	NA	16.99	268.0	mg/kg
BZ39-003	749257.365	2082642.644	0.0	0.5	Chrysene	220.00	55.00	NA	3490000.0	ug/kg
BZ39-003	749257.365	2082642.644	0.0	0.5	Fluoranthene	410.00	88.00	NA	27200000.0	ug/kg
BZ39-003	749257.365	2082642.644	0.0	0.5	Indeno(1,2,3-cd)pyrene	160.00	50.00	NA	34900.0	ug/kg
BZ39-003	749257.365	2082642.644	0.0	0.5	Pyrene	430.00	42.00	NA	22100000.0	ug/kg
BZ39-003	749257.365	2082642.644	0.5	0.8	Anthracene	110.00	82.00	NA	204000000.0	ug/kg
BZ39-003	749257.365	2082642.644	0.5	0.8	Benzo(a)anthracene	300.00	41.00	NA	34900.0	ug/kg
BZ39-003	749257.365	2082642.644	0.5	0.8	Benzo(a)pyrene	360.00	99.00	NA	3490.0	ug/kg
BZ39-003	749257.365	2082642.644	0.5	0.8	Benzo(b)fluoranthene	270.00	110.00	NA	34900.0	ug/kg
BZ39-003	749257.365	2082642.644	0.5	0.8	Benzo(k)fluoranthene	250.00	98.00	NA	349000.0	ug/kg
BZ39-003	749257.365	2082642.644	0.5	0.8	Chrysene	350.00	56.00	NA	3490000.0	ug/kg
BZ39-003	749257.365	2082642.644	0.5	0.8	Ethylbenzene	5.10	1.30	NA	4250000.0	ug/kg
BZ39-003	749257.365	2082642.644	0.5	0.8	Fluoranthene	710.00	89.00	NA	27200000.0	ug/kg
BZ39-003	749257.365	2082642.644	0.5	0.8	Indeno(1,2,3-cd)pyrene	240.00	51.00	NA	34900.0	ug/kg
BZ39-003	749257.365	2082642.644	0.5	0.8	Pyrene	610.00	42.00	NA	22100000.0	ug/kg
BZ39-003	749257.365	2082642.644	0.5	0.8	Toluene	1.80	0.83	NA	31300000.0	ug/kg
BZ39-003	749257.365	2082642.644	0.5	0.8	Uranium-235	0.15	NA	0.12	8.0	pCi/g
BZ39-003	749257.365	2082642.644	0.5	0.8	Uranium-238	1.53	NA	1.49	351.0	pCi/g
BZ39-003	749257.365	2082642.644	0.5	0.8	Xylene	5.90	3.00	NA	2040000.0	ug/kg
BZ39-004	749257.968	2082674.925	0.0	0.5	Acenaphthene	170.00	47.00	NA	40800000.0	ug/kg

Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analysis	Result	RL	Background	WRWAL	Unit
BZ39-004	749257.968	2082674.925	0.0	0.5	Anthracene	170.00	79.00	NA	204000000.0	ug/kg
BZ39-004	749257.968	2082674.925	0.0	0.5	Benzo(a)anthracene	340.00	40.00	NA	34900.0	ug/kg
BZ39-004	749257.968	2082674.925	0.0	0.5	Benzo(a)pyrene	370.00	96.00	NA	3490.0	ug/kg
BZ39-004	749257.968	2082674.925	0.0	0.5	Benzo(b)fluoranthene	320.00	100.00	NA	34900.0	ug/kg
BZ39-004	749257.968	2082674.925	0.0	0.5	Benzo(k)fluoranthene	340.00	95.00	NA	349000.0	ug/kg
BZ39-004	749257.968	2082674.925	0.0	0.5	Chrysene	390.00	54.00	NA	3490000.0	ug/kg
BZ39-004	749257.968	2082674.925	0.0	0.5	Fluoranthene	880.00	86.00	NA	27200000.0	ug/kg
BZ39-004	749257.968	2082674.925	0.0	0.5	Fluorene	130.00	77.00	NA	40800000.0	ug/kg
BZ39-004	749257.968	2082674.925	0.0	0.5	Indeno(1,2,3-cd)pyrene	280.00	49.00	NA	34900.0	ug/kg
BZ39-004	749257.968	2082674.925	0.0	0.5	Pyrene	870.00	41.00	NA	22100000.0	ug/kg
BZ39-004	749257.968	2082674.925	0.0	0.5	Uranium-235	0.15	NA	0.09	8.0	pCi/g
BZ39-004	749257.968	2082674.925	0.5	0.6	Acenaphthene	420.00	47.00	NA	40800000.0	ug/kg
BZ39-004	749257.968	2082674.925	0.5	0.6	Anthracene	480.00	80.00	NA	204000000.0	ug/kg
BZ39-004	749257.968	2082674.925	0.5	0.6	Benzo(a)anthracene	810.00	40.00	NA	34900.0	ug/kg
BZ39-004	749257.968	2082674.925	0.5	0.6	Benzo(a)pyrene	810.00	96.00	NA	3490.0	ug/kg
BZ39-004	749257.968	2082674.925	0.5	0.6	Benzo(b)fluoranthene	620.00	100.00	NA	34900.0	ug/kg
BZ39-004	749257.968	2082674.925	0.5	0.6	Benzo(k)fluoranthene	700.00	95.00	NA	349000.0	ug/kg
BZ39-004	749257.968	2082674.925	0.5	0.6	Chrysene	840.00	54.00	NA	3490000.0	ug/kg
BZ39-004	749257.968	2082674.925	0.5	0.6	Ethylbenzene	2.00	1.20	NA	4250000.0	ug/kg
BZ39-004	749257.968	2082674.925	0.5	0.6	Fluoranthene	2200.00	86.00	NA	27200000.0	ug/kg
BZ39-004	749257.968	2082674.925	0.5	0.6	Fluorene	330.00	78.00	NA	40800000.0	ug/kg
BZ39-004	749257.968	2082674.925	0.5	0.6	Indeno(1,2,3-cd)pyrene	630.00	49.00	NA	34900.0	ug/kg
BZ39-004	749257.968	2082674.925	0.5	0.6	Lead	26.30	NA	24.97	1000.0	mg/kg
BZ39-004	749257.968	2082674.925	0.5	0.6	Pyrene	1800.00	41.00	NA	22100000.0	ug/kg
BZ39-004	749257.968	2082674.925	0.5	0.6	Tetrachloroethene	1.30	1.00	NA	615000.0	ug/kg
BZ39-004	749257.968	2082674.925	0.5	0.6	Toluene	1.40	0.79	NA	31300000.0	ug/kg
BZ39-004	749257.968	2082674.925	0.5	0.6	Xylene	14.00	2.90	NA	2040000.0	ug/kg
BZ39-005	749251.806	2082717.533	0.0	0.5	Acenaphthene	130.00	46.00	NA	40800000.0	ug/kg
BZ39-005	749251.806	2082717.533	0.0	0.5	Anthracene	170.00	79.00	NA	204000000.0	ug/kg

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Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AL	Unit
BZ39-005	749251.806	2082717.533	0.0	0.5	Benzo(a)anthracene	340.00	39.00	NA	34900.0	ug/kg
BZ39-005	749251.806	2082717.533	0.0	0.5	Benzo(a)pyrene	400.00	95.00	NA	3490.0	ug/kg
BZ39-005	749251.806	2082717.533	0.0	0.5	Benzo(b)fluoranthene	340.00	100.00	NA	34900.0	ug/kg
BZ39-005	749251.806	2082717.533	0.0	0.5	Benzo(k)fluoranthene	330.00	94.00	NA	349000.0	ug/kg
BZ39-005	749251.806	2082717.533	0.0	0.5	Chrysene	410.00	54.00	NA	3490000.0	ug/kg
BZ39-005	749251.806	2082717.533	0.0	0.5	Fluoranthene	980.00	85.00	NA	27200000.0	ug/kg
BZ39-005	749251.806	2082717.533	0.0	0.5	Indeno(1,2,3-cd)pyrene	300.00	48.00	NA	34900.0	ug/kg
BZ39-005	749251.806	2082717.533	0.0	0.5	Pyrene	780.00	40.00	NA	22100000.0	ug/kg
BZ39-005	749251.806	2082717.533	0.0	0.5	Uranium-235	0.09	NA	0.09	8.0	pCi/g
BZ39-005	749251.806	2082717.533	0.5	0.6	Acenaphthene	120.00	47.00	NA	40800000.0	ug/kg
BZ39-005	749251.806	2082717.533	0.5	0.6	Anthracene	280.00	80.00	NA	204000000.0	ug/kg
BZ39-005	749251.806	2082717.533	0.5	0.6	Benzo(a)anthracene	820.00	40.00	NA	34900.0	ug/kg
BZ39-005	749251.806	2082717.533	0.5	0.6	Benzo(a)pyrene	890.00	96.00	NA	3490.0	ug/kg
BZ39-005	749251.806	2082717.533	0.5	0.6	Benzo(b)fluoranthene	700.00	100.00	NA	34900.0	ug/kg
BZ39-005	749251.806	2082717.533	0.5	0.6	Benzo(k)fluoranthene	720.00	95.00	NA	349000.0	ug/kg
BZ39-005	749251.806	2082717.533	0.5	0.6	Chrysene	960.00	55.00	NA	3490000.0	ug/kg
BZ39-005	749251.806	2082717.533	0.5	0.6	Fluoranthene	1600.00	86.00	NA	27200000.0	ug/kg
BZ39-005	749251.806	2082717.533	0.5	0.6	Indeno(1,2,3-cd)pyrene	660.00	49.00	NA	34900.0	ug/kg
BZ39-005	749251.806	2082717.533	0.5	0.6	Lead	39.10	NA	24.97	1000.0	mg/kg
BZ39-005	749251.806	2082717.533	0.5	0.6	Pyrene	1600.00	41.00	NA	22100000.0	ug/kg
BZ39-005	749251.806	2082717.533	0.5	0.6	Tetrachloroethene	1.90	1.00	NA	615000.0	ug/kg
BZ39-034	749272.940	2082701.365	0.0	0.5	Acenaphthene	130.00	32.00	NA	40800000.0	ug/kg
BZ39-034	749272.940	2082701.365	0.0	0.5	Anthracene	240.00	25.00	NA	204000000.0	ug/kg
BZ39-034	749272.940	2082701.365	0.0	0.5	Benzo(a)anthracene	760.00	26.00	NA	34900.0	ug/kg
BZ39-034	749272.940	2082701.365	0.0	0.5	Benzo(a)pyrene	890.00	42.00	NA	3490.0	ug/kg
BZ39-034	749272.940	2082701.365	0.0	0.5	Benzo(b)fluoranthene	650.00	30.00	NA	34900.0	ug/kg
BZ39-034	749272.940	2082701.365	0.0	0.5	Benzo(k)fluoranthene	820.00	33.00	NA	349000.0	ug/kg
BZ39-034	749272.940	2082701.365	0.0	0.5	Chrysene	930.00	29.00	NA	3490000.0	ug/kg
BZ39-034	749272.940	2082701.365	0.0	0.5	Dibenz(a,h)anthracene	310.00	26.00	NA	3490.0	ug/kg

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Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AL	Unit
BZ39-034	749272.940	2082701.365	0.0	0.5	Fluoranthene	1800.00	24.00	NA	27200000.0	ug/kg
BZ39-034	749272.940	2082701.365	0.0	0.5	Fluorene	110.00	35.00	NA	40800000.0	ug/kg
BZ39-034	749272.940	2082701.365	0.0	0.5	Indeno(1,2,3-cd)pyrene	590.00	24.00	NA	34900.0	ug/kg
BZ39-034	749272.940	2082701.365	0.0	0.5	Pyrene	1400.00	140.00	NA	22100000.0	ug/kg
BZ39-034	749272.940	2082701.365	0.0	0.5	Uranium-234	3.37	NA	2.25	300.0	pCi/g
BZ39-034	749272.940	2082701.365	0.0	0.5	Uranium-235	0.24	NA	0.09	8.0	pCi/g
BZ39-034	749272.940	2082701.365	0.0	0.5	Uranium-238	3.37	NA	2.00	351.0	pCi/g
BZ39-034	749272.940	2082701.365	0.5	1.0	Benzo(a)anthracene	47.00	28.00	NA	34900.0	ug/kg
BZ39-034	749272.940	2082701.365	0.5	1.0	Benzo(k)fluoranthene	53.00	36.00	NA	349000.0	ug/kg
BZ39-034	749272.940	2082701.365	0.5	1.0	Chrysene	56.00	31.00	NA	3490000.0	ug/kg
BZ39-034	749272.940	2082701.365	0.5	1.0	Fluoranthene	96.00	25.00	NA	27200000.0	ug/kg
BZ39-034	749272.940	2082701.365	0.5	1.0	Uranium-235	0.17	NA	0.12	8.0	pCi/g
BZ39-034	749272.940	2082701.365	0.5	1.0	Uranium-238	2.27	NA	1.49	351.0	pCi/g
CA39-000	749277.090	2082768.855	0.0	0.3	Anthracene	86.00	80.00	NA	204000000.0	ug/kg
CA39-000	749277.090	2082768.855	0.0	0.3	Benzo(a)anthracene	300.00	40.00	NA	34900.0	ug/kg
CA39-000	749277.090	2082768.855	0.0	0.3	Benzo(a)pyrene	330.00	96.00	NA	3490.0	ug/kg
CA39-000	749277.090	2082768.855	0.0	0.3	Benzo(b)fluoranthene	240.00	100.00	NA	34900.0	ug/kg
CA39-000	749277.090	2082768.855	0.0	0.3	Benzo(k)fluoranthene	260.00	95.00	NA	349000.0	ug/kg
CA39-000	749277.090	2082768.855	0.0	0.3	Chrysene	330.00	55.00	NA	3490000.0	ug/kg
CA39-000	749277.090	2082768.855	0.0	0.3	Fluoranthene	650.00	86.00	NA	27200000.0	ug/kg
CA39-000	749277.090	2082768.855	0.0	0.3	Indeno(1,2,3-cd)pyrene	250.00	49.00	NA	34900.0	ug/kg
CA39-000	749277.090	2082768.855	0.0	0.3	Pyrene	630.00	41.00	NA	22100000.0	ug/kg
CA39-000	749277.090	2082768.855	0.0	0.3	Uranium-235	0.17	NA	0.09	8.0	pCi/g
EAST WALL	749191.301	2082301.873	0.0	0.5	Acenaphthene	53.00	49.00	NA	40800000.0	ug/kg
EAST WALL	749191.301	2082301.873	0.0	0.5	Anthracene	160.00	83.00	NA	204000000.0	ug/kg
EAST WALL	749191.301	2082301.873	0.0	0.5	Benzo(a)anthracene	720.00	42.00	NA	34900.0	ug/kg
EAST WALL	749191.301	2082301.873	0.0	0.5	Benzo(a)pyrene	810.00	100.00	NA	3490.0	ug/kg
EAST WALL	749191.301	2082301.873	0.0	0.5	Benzo(b)fluoranthene	720.00	110.00	NA	34900.0	ug/kg
EAST WALL	749191.301	2082301.873	0.0	0.5	Benzo(k)fluoranthene	630.00	99.00	NA	349000.0	ug/kg

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Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AL	Unit
EAST WALL	749191.301	2082301.873	0.0	0.5	bis(2-Ethylhexyl)phthalate	270.00	74.00	NA	1970000.0	ug/kg
EAST WALL	749191.301	2082301.873	0.0	0.5	Chrysene	890.00	57.00	NA	3490000.0	ug/kg
EAST WALL	749191.301	2082301.873	0.0	0.5	Dibenz(a,h)anthracene	260.00	50.00	NA	3490.0	ug/kg
EAST WALL	749191.301	2082301.873	0.0	0.5	Fluoranthene	1400.00	90.00	NA	27200000.0	ug/kg
EAST WALL	749191.301	2082301.873	0.0	0.5	Indeno(1,2,3-cd)pyrene	540.00	51.00	NA	34900.0	ug/kg
EAST WALL	749191.301	2082301.873	0.0	0.5	Pyrene	1300.00	43.00	NA	22100000.0	ug/kg
EAST WALL	749191.301	2082301.873	0.5	2.5	Acenaphthene	95.00	48.00	NA	40800000.0	ug/kg
EAST WALL	749191.301	2082301.873	0.5	2.5	Anthracene	290.00	82.00	NA	204000000.0	ug/kg
EAST WALL	749191.301	2082301.873	0.5	2.5	Benzo(a)anthracene	1000.00	41.00	NA	34900.0	ug/kg
EAST WALL	749191.301	2082301.873	0.5	2.5	Benzo(a)pyrene	1100.00	99.00	NA	3490.0	ug/kg
EAST WALL	749191.301	2082301.873	0.5	2.5	Benzo(b)fluoranthene	850.00	110.00	NA	34900.0	ug/kg
EAST WALL	749191.301	2082301.873	0.5	2.5	Benzo(k)fluoranthene	990.00	98.00	NA	349000.0	ug/kg
EAST WALL	749191.301	2082301.873	0.5	2.5	bis(2-Ethylhexyl)phthalate	300.00	72.00	NA	1970000.0	ug/kg
EAST WALL	749191.301	2082301.873	0.5	2.5	Butylbenzylphthalate	310.00	36.00	NA	147000000.0	ug/kg
EAST WALL	749191.301	2082301.873	0.5	2.5	Chrysene	1200.00	56.00	NA	3490000.0	ug/kg
EAST WALL	749191.301	2082301.873	0.5	2.5	Dibenz(a,h)anthracene	350.00	49.00	NA	3490.0	ug/kg
EAST WALL	749191.301	2082301.873	0.5	2.5	Fluoranthene	2000.00	88.00	NA	27200000.0	ug/kg
EAST WALL	749191.301	2082301.873	0.5	2.5	Fluorene	82.00	80.00	NA	40800000.0	ug/kg
EAST WALL	749191.301	2082301.873	0.5	2.5	Indeno(1,2,3-cd)pyrene	730.00	50.00	NA	34900.0	ug/kg
EAST WALL	749191.301	2082301.873	0.5	2.5	Pyrene	1900.00	42.00	NA	22100000.0	ug/kg
EAST WALL	749191.301	2082301.873	0.5	2.5	Uranium-235	0.26	NA	0.12	8.0	pCi/g
WEST WALL	749191.764	2082271.261	0.0	0.5	Aluminum	26800.00	NA	16902.00	228000.0	mg/kg
WEST WALL	749191.764	2082271.261	0.0	0.5	Beryllium	1.30	NA	0.97	921.0	mg/kg
WEST WALL	749191.764	2082271.261	0.0	0.5	Chromium	19.60	NA	16.99	268.0	mg/kg
WEST WALL	749191.764	2082271.261	0.0	0.5	Lithium	14.10	NA	11.55	20400.0	mg/kg
WEST WALL	749191.764	2082271.261	0.0	0.5	Nickel	16.90	NA	14.91	20400.0	mg/kg
WEST WALL	749191.764	2082271.261	0.0	0.5	Uranium-234	2.76	NA	2.25	300.0	pCi/g
WEST WALL	749191.764	2082271.261	0.0	0.5	Uranium-235	0.21	NA	0.09	8.0	pCi/g
WEST WALL	749191.764	2082271.261	0.0	0.5	Uranium-238	2.76	NA	2.00	351.0	pCi/g

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Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AD	Unit
WEST WALL	749191.764	2082271.261	0.5	2.5	Acetone	6.40	4.80	NA	102000000.0	ug/kg
WEST WALL	749191.764	2082271.261	0.5	2.5	Pyrene	68.00	45.00	NA	22100000.0	ug/kg
WEST WALL	749191.764	2082271.261	0.5	2.5	Uranium-235	0.14	NA	0.12	8.0	pCi/g

WRW AL exceedances are shown in bold in Table 3 and in red on Figures 3 through 7. Plutonium-239/240 and uranium-234 activities based on HPGe results (derived from americium-241 and uranium-238 gamma spectroscopy results, respectively) are shown in Table 3 in italics. Table 3 and Figures 3 and 5 also include data associated with an IHSS Group 600-5 sampling location that lies within IHSS 400-157.1 (BZ39-034). Summary statistics for the project analytical results (characterization, in-process, and confirmation analysis) are presented in Tables 4 and 5 for surface soil and subsurface soil, respectively, except for TPH. All project data, retrieved from the RFETS Soil Water Database (SWD) on December 15, 2004, are provided on the enclosed CD. The CD contains standardized real and QC data (Chemical Abstracts Service [CAS] numbers, analyte names, and units).

Characterization data indicate contaminant concentrations were less than RFCA WRW ALs at 80 of the 91 characterization sampling locations. Nine locations, at various depths, had concentrations that exceeded the TPH standard of 5,000 milligrams per kilogram (mg/kg). Exceedances are associated with leaks from the fuel oil tanks or from spills that occurred during tank filling. Exceedances occurred as deep as 18.5 ft below ground surface (bgs), and the maximum concentration was 467,000 mg/kg (Figure 7). Two locations contained SVOC concentrations that exceeded WRW ALs. At BX39-008, benzo(a)pyrene concentrations at the surface and at 0.5 to 0.83 ft exceeded the WRW AL, and the dibenz(a,h)anthracene concentration at 0.5 to 0.83 ft exceeded the WRW AL (Figures 4 and 6). At BY39-003, the benzo(a)pyrene concentration at 0.5 to 2.5 ft exceeded the WRW AL (Figure 5). The SVOCs are polycyclic aromatic hydrocarbons (PAHs) commonly found in asphalt. Elevated SVOC and TPH concentrations resulted in soil removal (Section 3.1) and subsequent confirmation sampling (Section 4.0).

**Table 4**  
**IHSS Group 400-7 Surface Soil Data Summary Statistics**

Analyte	No. of Samples	Detection Frequency	Mean Concentration	Maximum Concentration	Background	WRW AL / Standard	Unit
2-Methylnaphthalene	51	5.88%	206.667	220.000	NA	20400000.0	ug/kg
Acenaphthene	51	29.41%	264.467	800.000	NA	40800000.0	ug/kg
Aluminum	51	33.33%	21517.647	26900.000	16902.000	228000.0	mg/kg
Americium-241	56	1.79%	0.151	0.151	0.023	76.0	pCi/g
Anthracene	51	31.37%	434.563	2200.000	NA	204000000.0	ug/kg
Antimony	52	7.69%	0.550	0.630	0.470	409.0	mg/kg
Arsenic	52	3.85%	11.700	12.000	10.090	22.2	mg/kg
Barium	52	5.77%	302.000	573.000	141.260	26400.0	mg/kg
Benzo(a)anthracene	51	64.71%	579.939	9300.000	NA	34900.0	ug/kg
Benzo(a)pyrene	51	47.06%	807.500	10000.000	NA	3490.0	ug/kg
Benzo(b)fluoranthene	51	45.10%	737.304	9000.000	NA	34900.0	ug/kg
Benzo(k)fluoranthene	51	47.06%	642.917	7500.000	NA	349000.0	ug/kg
Beryllium	51	11.76%	1.130	1.300	0.966	921.0	mg/kg
bis(2-Ethylhexyl)phthalate	51	17.65%	1924.444	12000.000	NA	1970000.0	ug/kg
Butylbenzylphthalate	51	3.92%	605.000	1000.000	NA	147000000.0	ug/kg
Chromium	52	30.77%	22.213	47.000	16.990	268.0	mg/kg
Chrysene	51	58.82%	695.667	10000.000	NA	3490000.0	ug/kg
Cobalt	52	3.85%	12.050	12.900	10.910	1550.0	mg/kg
Copper	52	19.23%	37.200	79.000	18.060	40900.0	mg/kg
Dibenz(a,h)anthracene	51	17.65%	439.889	2800.000	NA	3490.0	ug/kg
Dibenzofuran	51	7.84%	312.500	370.000	NA	2950000.0	ug/kg
Fluoranthene	51	60.78%	1323.226	17000.000	NA	27200000.0	ug/kg
Fluorene	51	17.65%	326.000	690.000	NA	40800000.0	ug/kg
Indeno(1,2,3-cd)pyrene	51	49.02%	524.840	6900.000	NA	34900.0	ug/kg
Iron	52	23.08%	22691.667	33200.000	18037.000	307000.0	mg/kg
Lead	52	3.85%	60.250	64.200	54.620	1000.0	mg/kg
Lithium	51	37.25%	13.911	16.200	11.550	20400.0	mg/kg
Manganese	52	5.77%	537.667	688.000	365.080	3480.0	mg/kg
Mercury	48	2.08%	0.150	0.150	0.134	25200.0	mg/kg
Naphthalene	51	7.84%	532.500	690.000	NA	3090000.0	ug/kg
Nickel	52	26.92%	18.993	38.300	14.910	20400.0	mg/kg
Plutonium-239/240	56	1.79%	0.861	0.861	0.066	50.0	pCi/g
Pyrene	51	76.47%	1011.205	17000.000	NA	22100000.0	ug/kg
Strontium	52	15.38%	88.788	250.000	48.940	613000.0	mg/kg
TPH	15	unknown	372.140	1680.000	NA	5000	mg/kg
Uranium-234	56	23.21%	3.482	6.000	2.253	300.0	pCi/g
Uranium-235	56	66.07%	0.190	0.508	0.094	8.0	pCi/g
Uranium-238	56	26.79%	3.305	6.000	2.000	351.0	pCi/g
Vanadium	52	19.23%	56.270	91.700	45.590	7150.0	mg/kg
Zinc	52	7.69%	89.225	104.000	73.760	307000.0	mg/kg

**Table 5**  
**IHSS Group 400-7 Subsurface Soil Data Summary Statistics**

Analyte	No. of Samples	Detection Frequency	Mean Concentration	Maximum Concentration	Background	WRW AL / Standard	Unit
1,2,4-Trichlorobenzene	88	2.27%	0.860	0.910	NA	9230000.0	ug/kg
1,2-Dichlorobenzene	87	2.30%	4.000	4.700	NA	31200000.0	ug/kg
2-Butanone	87	1.15%	5.100	5.100	NA	192000000.0	ug/kg
2-Methylnaphthalene	71	2.82%	155.000	230.000	NA	20400000.0	ug/kg
Acenaphthene	70	15.71%	312.182	1200.000	NA	40800000.0	ug/kg
Acetone	87	13.79%	39.308	360.000	NA	102000000.0	ug/kg
Aluminum	76	2.63%	43300.000	50600.000	35373.170	228000.0	mg/kg
Anthracene	70	17.14%	598.333	2700.000	NA	204000000.0	ug/kg
Arsenic	82	1.22%	19.100	19.100	13.140	22.2	mg/kg
Barium	82	7.32%	669.000	702.000	289.380	26400.0	mg/kg
Benzo(a)anthracene	70	47.14%	778.152	13000.000	NA	34900.0	ug/kg
Benzo(a)pyrene	70	30.00%	1226.619	14000.000	NA	3490.0	ug/kg
Benzo(b)fluoranthene	70	25.71%	1186.111	12000.000	NA	34900.0	ug/kg
Benzo(k)fluoranthene	70	27.14%	1149.474	12000.000	NA	349000.0	ug/kg
bis(2-Ethylhexyl)phthalate	70	12.86%	5761.556	48000.000	NA	1970000.0	ug/kg
Butylbenzylphthalate	70	2.86%	280.000	310.000	NA	147000000.0	ug/kg
Chrysene	70	48.57%	870.147	15000.000	NA	3490000.0	ug/kg
Copper	82	6.10%	127.080	312.000	38.210	40900.0	mg/kg
Dibenz(a,h)anthracene	70	11.43%	768.750	3900.000	NA	3490.0	ug/kg
Dibenzofuran	70	5.71%	245.000	480.000	NA	2950000.0	ug/kg
Ethylbenzene	87	4.60%	6.500	12.000	NA	4250000.0	ug/kg
Fluoranthene	70	45.71%	1655.031	23000.000	NA	27200000.0	ug/kg
Fluorene	70	10.00%	374.571	930.000	NA	40800000.0	ug/kg
Indeno(1,2,3-cd)pyrene	70	35.71%	725.040	9900.000	NA	34900.0	ug/kg
Iron	82	2.44%	48600.000	53000.000	41046.520	307000.0	mg/kg
Lead	82	20.73%	73.594	488.000	24.970	1000.0	mg/kg
Methylene chloride	87	20.69%	1.544	2.300	NA	2530000.0	ug/kg
Naphthalene	88	6.82%	156.967	570.000	NA	3090000.0	ug/kg
Nickel	82	1.22%	84.700	84.700	62.210	20400.0	mg/kg
n-Nitrosodipropylamine	70	1.43%	700.000	700.000	NA	5470.0	ug/kg
Pyrene	70	58.57%	1240.268	24000.000	NA	22100000.0	ug/kg
Tetrachloroethene	87	10.34%	1.856	4.100	NA	615000.0	ug/kg
Toluene	87	8.05%	1.261	1.800	NA	31300000.0	ug/kg
TPH	143	unknown	11429.280	467000.000	NA	5000	mg/kg
Trichloroethene	87	1.15%	2.000	2.000	NA	19600.0	ug/kg
Uranium, Total	76	1.32%	4.700	4.700	3.040	2750.0	mg/kg
Uranium-234	97	15.46%	3.844	5.160	2.640	300.0	pCi/g
Uranium-235	97	52.58%	0.181	0.400	0.120	8.0	pCi/g
Uranium-238	97	42.27%	2.651	5.160	1.490	351.0	pCi/g
Vanadium	82	6.10%	113.860	170.000	88.490	7150.0	mg/kg
Xylene	87	6.90%	23.167	67.000	NA	2040000.0	ug/kg
Zinc	82	2.44%	242.500	289.000	139.100	307000.0	mg/kg

## 2.7 Sum of Ratios

RFCA sums of ratios (SORs) were calculated for the IHSS Group 400-7 sampling locations based on the accelerated action characterization data for the contaminants of concern (COCs) and the WRW ALs. Surface soil (0 to 3 ft) SORs were calculated for the radionuclides of concern (americium-241, plutonium-239/240, uranium-234, uranium-235 and uranium-238). Other surface soil (0 to 0.5 ft) SORs were calculated for the non-radionuclides of concern (metals, VOCs, and SVOCs excluding arsenic, aluminum, iron, manganese, PAHs, and TPH). Subsurface soil non-radionuclide concentrations are evaluated as part of the SSRS in Section 6.0.

SORs for radionuclides were calculated for all locations with analytical results greater than background means plus two standard deviations. Plutonium-239/240 activities are derived from americium-241 activities (that is, plutonium-239/240 activity = americium-241 gamma spectroscopy activity x 5.7) when americium-241 is measured using HPGe detection analysis. SORs for radionuclides within the first 3 ft below grade are presented in Table 6. As shown, SORs for radionuclides in surface soil are less than 1 at all locations.

**Table 6**  
**IHSS Group 400-7 Sum of Ratios for Radionuclides in Surface Soil**

Location Code	Northing	Easting	SBD (ft)	SED (ft)	SOR
ABX39-001	749234.398	2082301.347	3	3.01	0.049
ABX39-002	749229.738	2082304.916	3	3.01	0.032
ABX39-003	749231.969	2082285.346	3	3.01	0.017
ABX39-004	749234.447	2082273.061	3	3.01	0.027
ABX39-005	749228.958	2082279.034	3	3.01	0.005
ABX39-006	749192.672	2082279.218	3	3.01	0.021
ABX39-007	749232.416	2082299.773	3	3.01	0.016
BX38-000	749140.261	2082252.815	0	0.5	0.030
BX38-001	749129.421	2082307.310	0	0.5	0.028
BX38-001	749129.421	2082307.310	0.5	2.5	0.017
BX38-003	749145.208	2082276.584	0	0.5	0.024
BX38-003	749145.208	2082276.584	0.5	2.5	0.020
BX38-004	749094.772	2082388.957	0	0.5	0.060
BX38-004	749094.772	2082388.957	0.5	2.5	0.025
BX38-005	749145.643	2082275.820	0	0.5	0.044
BX38-005	749145.643	2082275.820	0.5	2.5	0.044
BX38-006	749093.104	2082309.772	0	0.5	0.019
BX38-006	749093.104	2082309.772	0.5	2.5	0.022
BX38-009	749087.398	2082185.084	0	0.5	0.045
BX38-009	749087.398	2082185.084	2	2.5	0.024
BX38-010	749051.254	2082164.742	0	0.5	0.017
BX38-011	749130.966	2082218.219	0	0.5	0.044
BX38-011	749130.966	2082218.219	0.5	2.5	0.016
BX38-011	749130.966	2082218.219	2.5	4.5	0.021
BX39-000	749162.020	2082243.740	0	0.5	0.032
BX39-001	749289.214	2082268.789	0.5	2.5	0.018

*Closeout Report for IHSS Group 400-7*

Location Code	Northing	Easting	SBD (ft)	SED (ft)	SOR
BX39-003	749216.977	2082272.619	0	0.5	0.020
BX39-003	749216.977	2082272.619	0.5	2.5	0.025
BX39-004	749181.380	2082273.959	0	0.5	0.014
BX39-004	749181.380	2082273.959	0.5	2.5	0.017
BX39-006	749201.234	2082304.136	0.5	2.5	0.034
BX39-007	749232.416	2082299.773	0	0.5	0.022
BX39-007	749232.416	2082299.773	0.5	1	0.022
BX39-008	749272.980	2082301.060	0	0.5	0.069
BX39-008	749272.980	2082301.060	0.5	0.83	0.025
BX39-009	749292.111	2082331.118	0.5	1.3	0.005
BX39-010	749256.458	2082332.860	0	0.5	0.088
BX39-010	749256.458	2082332.860	0.5	2.5	0.038
BX39-011	749219.394	2082334.963	0	0.5	0.041
BX39-011	749219.394	2082334.963	0.5	2.5	0.027
BX39-012	749184.480	2082336.647	0	0.5	0.021
BY38-000	749131.677	2082369.670	0	0.5	0.019
BY38-001	749148.541	2082338.099	0	0.5	0.017
BY38-002	749109.548	2082339.740	0	0.5	0.016
BY38-003	749076.617	2082341.184	0	0.5	0.017
BY38-003	749076.617	2082341.184	0.5	2.5	0.024
BY38-004	749096.235	2082372.028	0	0.5	0.024
BY38-006	749115.403	2082402.004	0	0.5	0.014
BY38-006	749115.403	2082402.004	0.5	2.5	0.020
BY38-007	749152.286	2082401.245	0	0.5	0.016
BY38-007	749152.286	2082401.245	0.5	2.5	0.018
BY38-008	749097.750	2082482.857	0	0.5	0.069
BY38-008	749097.750	2082482.857	0.5	2.5	0.056
BY38-009	749099.026	2082522.941	0.5	2.5	0.056
BY38-010	749077.510	2082523.893	0.5	2.5	0.031
BY38-011	749131.623	2082416.427	0.5	2.5	0.022
BY38-011	749131.623	2082416.427	4.5	6.5	0.022
BY39-000	749168.077	2082368.798	0	0.5	0.026
BY39-000	749168.077	2082368.798	0.5	2.5	0.005
BY39-001	749203.618	2082366.949	0	0.5	0.016
BY39-001	749203.618	2082366.949	0.5	2.5	0.005
BY39-002	749239.810	2082364.890	0	0.5	0.037
BY39-002	749239.810	2082364.890	0.5	2.5	0.075
BY39-003	749275.404	2082363.414	0	0.5	0.040
BY39-004	749187.401	2082398.534	0	0.5	0.024
BY39-004	749187.401	2082398.534	0.5	2.5	0.045
BY39-005	749223.286	2082398.066	0	0.5	0.028
BY39-005	749223.286	2082398.066	0.5	2.5	0.022
BY39-006	749259.269	2082395.199	0	0.5	0.023
BY39-006	749259.269	2082395.199	0.5	0.83	0.045
BY39-008	749262.227	2082457.451	0	0.5	0.024
BY39-008	749262.227	2082457.451	0.5	1.25	0.025

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Location Code	Northing	Easting	SBD (ft)	SED (ft)	SOR
BZ38-000	749086.603	2082553.622	0.5	2.5	0.031
BZ38-001	749071.128	2082553.045	0.5	2.5	0.032
BZ39-000	749258.728	2082548.286	0	0.5	0.018
BZ39-000	749258.728	2082548.286	0.5	0.67	0.024
BZ39-001	749257.286	2082581.652	0	0.5	0.015
BZ39-001	749257.286	2082581.652	0.5	0.67	0.021
BZ39-002	749257.553	2082613.132	0	0.5	0.025
BZ39-002	749257.553	2082613.132	0.5	0.75	0.024
BZ39-003	749257.365	2082642.644	0.5	0.75	0.024
BZ39-004	749257.968	2082674.925	0	0.5	0.019
BZ39-005	749251.806	2082717.533	0	0.5	0.012
CA39-000	749277.090	2082768.855	0	0.33	0.021
EAST WALL	749191.301	2082301.873	0.5	2.5	0.033
WEST WALL	749191.764	2082271.261	0	0.5	0.043
WEST WALL	749191.764	2082271.261	0.5	2.5	0.017

SORs for non-radionuclides were calculated for all surface locations where analyte concentrations were 10 percent or more of a contaminant's WRW AL, but less than the AL. Based on the analytical results, only one SOR was calculated. The SOR at Sampling Location BY38-008 was 0.175.

### 3.0 ACCELERATED ACTION

Accelerated action objectives were developed and described in ER RSOP Notification #02-06 (DOE 2002c). The accelerated action objectives for IHSS Group 400-7 included the following:

- Remove any remaining structures and pipelines within 3 ft of final grade;
- Remove soil contaminated above RFCA WRW ALs;
- Remove contaminated soil to below RFCA WRW ALs if indicated through the stewardship evaluation;
- Remove New Process Waste Lines (NPWL) and valve vaults located more than 3 ft bgs if contaminated;
- Remove the sewer line west of UBC 442 located more than 3 ft bgs if contaminated;
- Recycle the UBC 442 floor slab in accordance with the RSOP for Recycling Concrete (DOE 1999a) or dispose of;
- Remove the four tanks west of Building 442 and remediate any potentially contaminated soil; and
- Collect confirmation samples in accordance with the IASAP (DOE 2001).

Accelerated action activities were conducted between June 2002 and October 2004. During summer 2002, the Building 442 and Building 452 slabs and under-slab building components were removed, and many of the planned samples were collected and analyzed. During summer 2003, additional samples were collected and analyzed. During summer and fall 2004, the four fuel oil tanks associated with the Steam Plant (Building 443) were removed. Soil sampling was also conducted to determine the extent of oil contamination associated with leaking tanks and lines. Contaminated soil was then removed. Start and end dates of significant activities are listed in Table 7. Key components removed and remaining are shown on Figure 8. Photographs of site activities are provided in Appendix A.

**Table 7**  
**Dates of Accelerated Action Activities**

Activity	Start Date	End Date
Soil Sampling Activities	June 13, 2002	August 20, 2002
	July 29, 2003	September 9, 2003
	July 26, 2004	October 25, 2004
Removal Activities	June 7, 2002	August 26, 2002
	August 23, 2004	October 22, 2004
Backfill Excavations and Regrade	August 19, 2002	August 21, 2002
	September 27, 2004	October 28, 2004

### 3.1 Removal Activities

All accelerated action objectives were achieved. Removal activities are described below.

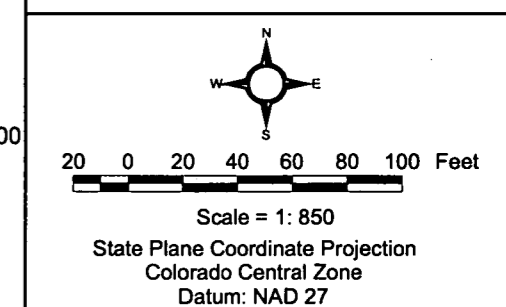
#### 3.1.1 Building Slabs And Other Building Components (2002)

The slabs from the warehouse (W) section and laundry (L) section of Building 442 were removed, along with all footer walls and footers. The slabs were cut using saws, and footer walls and footers were broken using hydraulic hammers. All removed material was surveyed, and uncontaminated material was transported to the Building 980 concrete rubble/recycle pile to be recycled in accordance with the RSOP for Recycling Concrete (DOE 1999a). Contaminated material, including the two sumps and the scale pit in the L section, was placed in waste (cargo) containers and disposed of off site as low-level radioactive waste (LLW). The sumps had been previously filled with grout. Cargo containers were then filled with foam. Asbestos-containing material encountered was disposed of as asbestos waste. All excavated areas were backfilled and graded.

The Building 452 slab was also removed. Hammering operations were used on the northern slab (uncontaminated), and saw-cutting was used on the southern slab (contaminated). Surveys were then performed to release the slab. Fixed contamination was found on a small section of the south slab, which was packaged as LLW. Other sections of the slab were transported to the Building 980 concrete rubble/recycle pile to be recycled in accordance with the RSOP for Recycling Concrete (DOE 1999a).

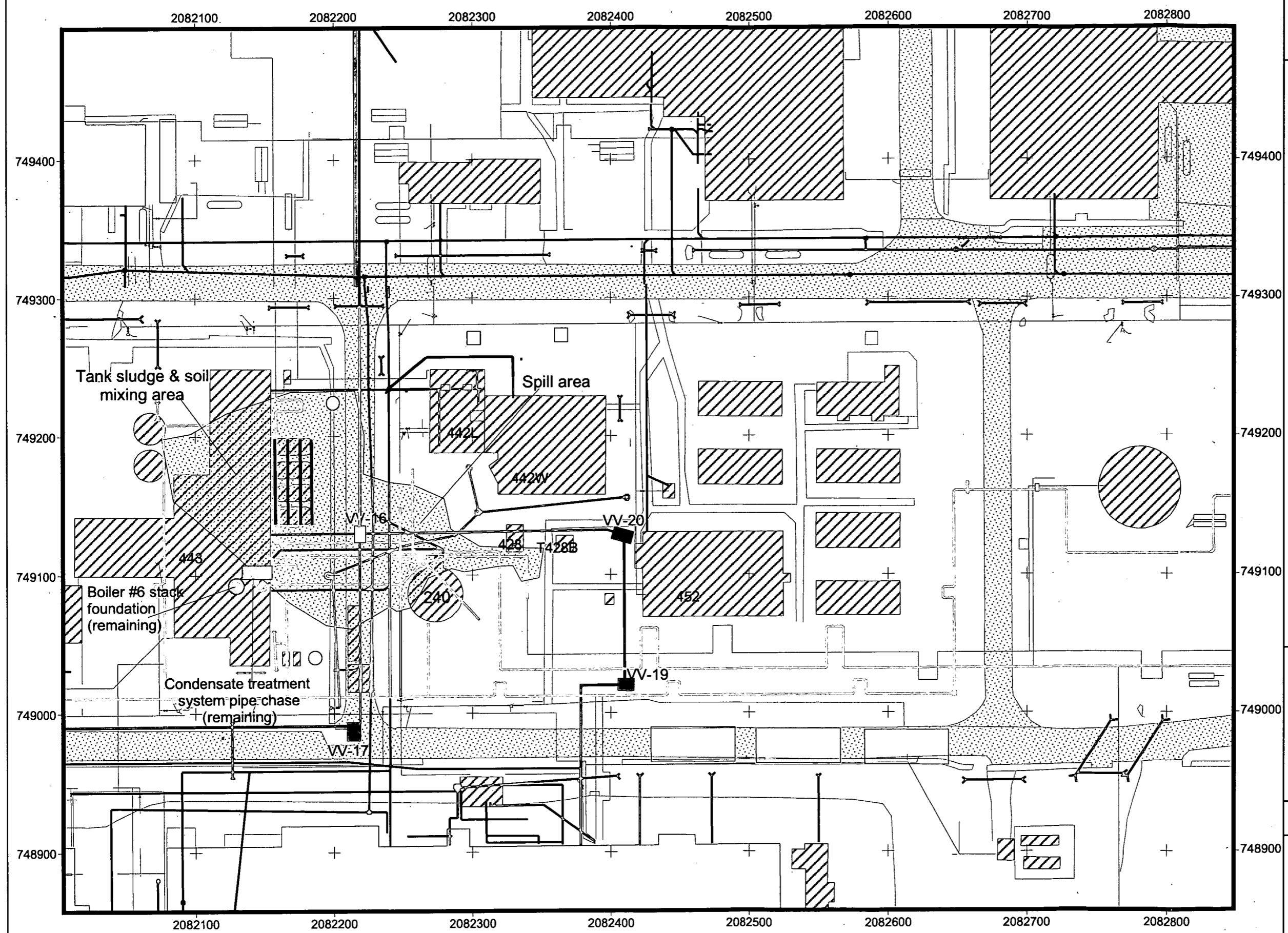
**Figure 8**  
**IHSS Group 400-7**  
**Structural Features Removed and Remaining**

- KEY**
- Demolished building
  - Standing building
  - Tank/soil removal area
  - Removed sump/pit
  - Removed sanitary line
  - Remaining sanitary line
  - Valve vault removed to 4 ft bgs
  - Removed valve vault
  - Removed NPWL
  - Remaining NPWL
  - Removed storm drain
  - Remaining storm drain
  - Removed water/steam line
  - Remaining water/steam line
  - Remaining tank support
  - SVOC removal area
  - Removed UST
  - Paved road



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### **3.1.2 Process and Sanitary Lines (2002)**

Waste lines within Building 442 consisted of lines within the L section, which were used for sanitary and laundry waste, and a sanitary line exiting the W section. All process/sanitary lines under the Building 442 slab were removed (Figure 8) and disposed of in metal boxes as low-level mixed waste (LLMW) (radioactive and hazardous). The lines were cast iron and contained lead. Prior to dismantlement and removal, lines were tapped and drained, and most were filled with epoxy resin to fix contamination. Some small sections could not be filled because of obstructions in the lines.

The section of waste line west of Building 442, which connected the building to the main sewer line, was left in place because of safety concerns associated with its removal. The section at the manhole at Fifth Street was 12 to 13 ft deep, and groundwater was intruding. This section is approximately 30 ft long and consists of 6-inch cast iron. The end of the remaining section (at the building footprint) is more than 6 ft bgs and was filled with foam. No contamination was found outside the pipe. Based on discussions with CDPHE (Contact Record dated August 12, 2002, Appendix B), this section of line will be reevaluated as part of the sanitary sewer system closure (DOE 2004).

The sanitary line exiting the W section was surveyed, and no radioactivity was detected. Most of the line is located more than 3 ft bgs, and therefore, was left in place (Figure 8). The section nearest the building footprint and clean-outs within the line were removed (to below 3 ft) and disposed of as sanitary waste. The end of the remaining section nearest the building footprint was filled with foam.

A storm drain, consisting of corrugated metal and located south of the Building 442 L section (Figure 8), also was removed. The section from the storm grate to the drainage ditch was removed, and based on survey results, was disposed of as sanitary waste.

### **3.1.3 Asphalt and Soil (2002)**

Asphalt on the southwestern part of the Building 442 site and the asphalt walkways at Building 452 were removed and transported to an off-site sanitary landfill. All the asphalt was screened for radioactivity prior to release off site.

Soil beneath removed items (that is, slabs, sumps, scale pit, and waste lines) was sampled, and analytical results indicated contaminant concentrations were below WRW ALs (Section 2.0) and soil removal in those areas was not necessary. All soil excavated during removal activities or grouting of waste lines was returned to the excavation.

As presented in Section 2.6, SVOC concentrations exceeded WRW ALs at Sampling Locations BX39-008 and BY39-003. Therefore, based on discussion with sampling personnel, approximately 18 to 24 inches of soil in a 3-ft diameter circle were removed from each location. The remaining soil was then sampled to confirm that residual concentrations were below RFCA ALs. Confirmation results, having the same location codes, are presented in Section 4.0.

### **3.1.4 Removal of Fuel Oil Tanks, Utilities, and Oil-Contaminated Soil (2004)**

The four fuel oil tanks located east of Building 443 were removed and disposed of as sanitary waste. Prior to removal, oil and water remaining in Tanks #1-3 (8,000 gallons from Tank #1, 10,000 gallons from Tank #2, and 12,000 gallons from Tank #3) was

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pumped in tanks and transported to an off-site sanitary landfill. This fuel oil and water mixture was placed in an open pit, mixed with soil, and disposed of in the landfill as a non-liquid waste. Sludge (consisting of aged #6 fuel oil) remaining in the three tanks was removed by removing the upper portion of each tank with a shear and extracting the sludge with an excavator bucket. The sludge was then placed in a small excavation to the west of the tanks (former site of Building 443), mixed with the excavated soil, and analyzed via alpha spectroscopy. Based on analytical results, the sludge/soil mixture was placed in dump trucks and disposed of off site as sanitary waste. Tank #4, which had previously been RCRA-closed and foamed, was removed, size-reduced, and disposed of as sanitary waste. The concrete tank supports were left in place (12 to 17 ft bgs).

Oil-contaminated soil (approximately 13,000 cubic yards [cu yd]) was removed from five areas:

- Where the fuel oil tanks were located and leaked (approximately 4,000 sq ft and as deep as 22.5 ft bgs);
- Along the length of a steam line that ran east of Building 443 just south of the diesel tanks (approximately 130 ft and 5 ft bgs);
- Around NPWL Valve Vault 16 (approximately 225 sq ft and 5 to 23 ft bgs);
- A "spill area" north of the pipeline (approximately 40 sq ft and 1.5 to 2.5 ft bgs); and
- Where the tank sludge was mixed with soil prior to disposal (approximately 200 sq ft and 6 ft bgs).

In addition to the tanks and contaminated soil, various other items were removed from the area:

- Asphalt along Fifth Street between Central Avenue and Cottonwood Avenue, and two driveways east of Building 443 (north and south of the fuel oil tanks);
- NPWL, including the section running north from Valve Vault 17 to Central Avenue, the section running east from former Building 443 to former Valve Vault 16, and the section running east from former Valve Vault 16 toward former Building 428 approximately 40 ft;
- All of Valve Vault 16, and the top 4 ft of Valve Vault 17 (the top 4 ft of Valve Vaults 19 and 20 had been previously removed);
- Underground steam line sections, 60 ft of sanitary line sections, 50 ft of water line sections, and one hydrant (aboveground steam lines had been previously removed);
- Storm drains and culverts south of former Building 442;
- Two emergency generator diesel underground storage tanks (USTs) (previously foamed) and associated fuel lines;

- Several concrete structures, including pump/fill enclosures on the eastern end of each fuel oil tank, concrete pipe trenches from the tanks to Building 443, several steam line stanchion foundations along the eastern side of Building 443, and various equipment pads, including two exchange heater foundations; and
- Asbestos insulation.

The extent of the excavation to remove the tanks, contaminated soil, and other items is shown on Figure 8. The Building 443 slab had been previously removed, with the exception of the Boiler #6 exhaust stack foundation and the concrete slab for the condensate treatment system pipe chase, which are situated more than 4 ft bgs. The remaining ends of NPWL and sewer lines were grouted. The remaining ends of water lines were capped, and caps were secured with thrust rods. Approximately 15,000 cu yds of clean dirt was brought in to backfill the excavation and achieve final grade for the area. During remediation, the removed storm culverts were temporarily replaced by new drainage ditches to facilitate drainage around the oil-contaminated soil. As the site was final graded, these drainage ditches were removed.

Removal of oil-contaminated soil at five locations within the tank basin required two rounds of soil removal. After the initial excavation of the tank basin, six samples were collected on September 20, 2004. These samples were field-screened, and five of the six indicated concentrations greater than the TPH standard. Four of these samples were sent to an off-site laboratory for testing, and results confirmed that concentrations at two locations were greater than the AL, as shown in bold in Table 8. Additional soil was then removed, and the bottom of the subsequent excavation was sampled on September 27, 2004. Analytical results from this confirmation sampling are presented in Section 4.0, along with results from all other confirmation sampling. The field-screened sample with results that did not exceed the TPH standard, from Sampling Location BX38-038, became a confirmation sample, and therefore, the sampling location was not re-sampled (refer to Section 4.0).

**Table 8**  
**IHSS Group 400-7 In-Process Soil Characterization Results**

Location	SBD (ft)	SED (ft)	Analyte	Result	TPH Standard	Unit
BX38-055	12.0	12.5	TPH	4,390	5,000	mg/kg
<b>BX39-035</b>	12.0	12.5	<b>TPH</b>	<b>10,100</b>	<b>5,000</b>	<b>mg/kg</b>
BX39-036	12.0	12.5	TPH	150	5,000	mg/kg
<b>BX39-037</b>	12.0	12.5	<b>TPH</b>	<b>8,480</b>	<b>5,000</b>	<b>mg/kg</b>

Specifications for this in-process sampling are presented in Table 1 and included in the summary sampling and analysis table (Table 2) and the summary statistics tables (Tables 4 and 5). In-process TPH data are also included on the enclosed CD.

#### 4.0 CONFIRMATION SAMPLING

Confirmation sampling was conducted where contaminated soil was removed. This sampling was required to demonstrate that residual contaminant concentrations in soil are below the WRW ALs or the RFCA TPH standard, or are acceptable based on the SSRS.

Sampling and analysis were conducted in accordance with the IASAP (DOE 2001). Specifications for confirmation sampling are presented in Table 1 and included in the summary of sampling and analysis (Table 2) and the summary statistics (Tables 4 and 5). Results are presented in Table 9 and shown on Figure 9. Only results greater than background means plus two standard deviations or RLs are shown. Results indicate all contaminant concentrations are below WRW ALs. All project data, retrieved from SWD on December 15, 2004, are provided on the enclosed CD.

Table 9 and Figure 9 indicate that confirmation samples at Sampling Locations BX39-008 and BY39-003 were collected at 0.0 to 0.5 ft, as recorded in SWD. However, the samples were collected from the bottom of the excavations created when the SVOC-contaminated soil was removed. The excavation bottoms were between 18 and 24 inches bgs.

SORs based on confirmation sampling results for radionuclides are presented in Table 10. SORs for radionuclides were only calculated for soil concentrations within the first 3 ft below grade. As shown, SORs are less than 1. No SORs for non-radionuclides were calculated because all concentrations were less than 10 percent of the corresponding WRW ALs. The presence of radionuclides below 3 ft and non-radionuclides in subsurface soil are addressed in the SSRS (Section 6.0).

## 5.0 POST-REMEDATION CONDITIONS

The Building 442 slab, sumps, scale pit, footer walls, and footers were removed, as well as all waste lines located under the slab and the Building 452 slab. The section of waste line west of the building, which connected the building to the main sewer line, was left in place. The section is approximately 30 ft long and consists of 6-inch cast iron. It is assumed that the line is internally contaminated. No contamination was found outside the line. Most of the line that exited the W section of Building 442 was also left in place. This section of line was surveyed, and no radioactivity was detected. The ends of the remaining sections were filled with foam. In addition, the four fuel oil tanks east of Building 443 and oil-contaminated soil were removed. Items within the associated excavation were removed, including sections of the NPWL, sanitary sewer, storm sewer, steam, and water systems; all of Valve Vault 16 and the top 4 ft of Valve Vault 17; two emergency generator USTs; small concrete structures and area asphalt; and asbestos insulation. Remaining items include the concrete tank supports, a Building 443 concrete boiler foundation, and a Building 443 concrete pipe chase. After items were removed, excavations were backfilled with clean soil, and the area was graded. Removed and remaining structures are presented in Section 3.1 and on Figure 8. Remaining NPWL and sanitary lines are being addressed based on Sitewide decisions regarding the NPWL and the sanitary system.

Residual surface and subsurface soil concentrations greater than background means plus two standard deviations or RLs are shown on Figures 10 through 13. The presence of residual contamination was determined based on historical and accelerated action (characterization and confirmation) sampling results. NLR sampling locations (Section 12.0) are not included. Residual surface and subsurface contaminant concentrations are less than RFCA WRW ALs. Residual contamination will be further evaluated in the Sitewide CRA and the Accelerated Action Ecological Screening Evaluation (AAESE).

Table 9 IHSS Group 400-7 Confirmation Soil Sampling Data

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AL	Unit
BW39-003	749174.363	2082132.945	16.0	16.2	Chrysene	55.00	31.00	NA	3490000	ug/kg
BW39-003	749174.363	2082132.945	16.0	16.2	Methylene chloride	1.60	0.91	NA	2530000	ug/kg
BW39-003	749174.363	2082132.945	16.0	16.2	TPH	122.00	3.70	NA	5000	mg/kg
BX38-056	749118.469	2082170.911	16.0	16.2	Benzo(a)anthracene	70.00	28.00	NA	34900	ug/kg
BX38-056	749118.469	2082170.911	16.0	16.2	Chrysene	150.00	32.00	NA	3490000	ug/kg
BX38-056	749118.469	2082170.911	16.0	16.2	Methylene chloride	2.00	0.94	NA	2530000	ug/kg
BX38-056	749118.469	2082170.911	16.0	16.2	TPH	155.00	3.80	NA	5000	mg/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Acenaphthene	110.00	50.00	NA	40800000	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Anthracene	99.00	84.00	NA	204000000	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Benzo(a)anthracene	220.00	42.00	NA	34900	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Benzo(a)pyrene	260.00	100.00	NA	3490	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Benzo(b)fluoranthene	180.00	110.00	NA	34900	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Benzo(k)fluoranthene	250.00	100.00	NA	349000	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	bis(2-Ethylhexyl)phthalate	360.00	74.00	NA	1970000	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Chrysene	260.00	57.00	NA	3490000	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Fluoranthene	610.00	91.00	NA	27200000	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Indeno(1,2,3-cd)pyrene	150.00	52.00	NA	34900	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Pyrene	510.00	43.00	NA	22100000	ug/kg
BX39-008	749272.980	2082301.060	0.0	0.5	Uranium-234	4.10	NA	2.25	300	pCi/g
BX39-008	749272.980	2082301.060	0.0	0.5	Uranium-235	0.19	NA	0.09	8	pCi/g
BX39-008	749272.980	2082301.060	0.0	0.5	Uranium-238	4.10	NA	2.00	351	pCi/g
BX39-038	749210.575	2082180.745	12.0	12.5	TPH	479.00	6.80	NA	5000	mg/kg
BX39-040	749170.043	2082158.709	16.0	16.2	Acetone	5.80	5.20	NA	102000000	ug/kg
BX39-040	749170.043	2082158.709	16.0	16.2	Methylene chloride	1.60	0.90	NA	2530000	ug/kg
BX39-040	749170.043	2082158.709	16.0	16.2	TPH	44.60	3.70	NA	5000	mg/kg
BX39-041	749168.237	2082203.463	16.0	16.2	Acetone	9.40	4.90	NA	102000000	ug/kg
BX39-041	749168.237	2082203.463	16.0	16.2	Methylene chloride	1.50	0.86	NA	2530000	ug/kg
BX39-041	749168.237	2082203.463	16.0	16.2	TPH	54.20	3.60	NA	5000	mg/kg

Closeout Report for IHSS Group 400-7

Location Code	Northing	Easting	SBD (ft)	SED (ft)	Analyte	Result	RL	Background	WRW AL	Unit
BX39-042	749187.642	2082173.667	20.0	20.5	Benzo(a)anthracene	88.00	31.00	NA	34900	ug/kg
BX39-042	749187.642	2082173.667	20.0	20.5	Chrysene	200.00	35.00	NA	3490000	ug/kg
BX39-042	749187.642	2082173.667	20.0	20.5	Fluoranthene	48.00	29.00	NA	27200000	ug/kg
BX39-042	749187.642	2082173.667	20.0	20.5	Methylene chloride	2.30	1.00	NA	2530000	ug/kg
BX39-042	749187.642	2082173.667	20.0	20.5	Pyrene	180.00	170.00	NA	22100000	ug/kg
BX39-042	749187.642	2082173.667	20.0	20.5	TPH	258.00	4.30	NA	5000	mg/kg
BY38-042	749120.192	2082207.938	18.0	18.2	TPH	632.00	196.00	NA	5000	mg/kg
BY38-043	749094.910	2082208.468	8.0	8.2	TPH	642.00	181.00	NA	5000	mg/kg
BY38-045	749111.847	2082282.077	8.0	8.2	TPH	891.00	178.00	NA	5000	mg/kg
BY38-047	749114.599	2082344.484	6.0	6.2	TPH	48.70	36.10	NA	5000	mg/kg
BY38-048	749111.977	2082345.323	5.0	5.2	TPH	400.00	74.80	NA	5000	mg/kg
BY38-049	749107.996	2082338.073	7.0	7.2	TPH	239.00	37.30	NA	5000	mg/kg
BY39-003	749275.404	2082363.414	0.0	0.5	Benzo(a)anthracene	310.00	42.00	NA	34900	ug/kg
BY39-003	749275.404	2082363.414	0.0	0.5	Benzo(a)pyrene	350.00	100.00	NA	3490	ug/kg
BY39-003	749275.404	2082363.414	0.0	0.5	Benzo(b)fluoranthene	340.00	110.00	NA	34900	ug/kg
BY39-003	749275.404	2082363.414	0.0	0.5	Benzo(k)fluoranthene	340.00	100.00	NA	349000	ug/kg
BY39-003	749275.404	2082363.414	0.0	0.5	Chrysene	370.00	57.00	NA	3490000	ug/kg
BY39-003	749275.404	2082363.414	0.0	0.5	Fluoranthene	570.00	90.00	NA	27200000	ug/kg
BY39-003	749275.404	2082363.414	0.0	0.5	Indeno(1,2,3-cd)pyrene	230.00	52.00	NA	34900	ug/kg
BY39-003	749275.404	2082363.414	0.0	0.5	Pyrene	560.00	43.00	NA	22100000	ug/kg
BY39-003	749275.404	2082363.414	0.0	0.5	Uranium-234	2.50	NA	2.25	300	pCi/g
BY39-003	749275.404	2082363.414	0.0	0.5	Uranium-235	0.20	NA	0.09	8	pCi/g
BY39-003	749275.404	2082363.414	0.0	0.5	Uranium-238	2.50	NA	2.00	351	pCi/g
BY39-012	749123.690	2082285.659	8.0	8.2	TPH	103.00	35.10	NA	5000	mg/kg
BY39-013	749117.172	2082344.544	5.0	5.2	TPH	284.00	38.60	NA	5000	mg/kg
BY39-014	749140.937	2082252.121	4.0	4.2	TPH	192.00	37.50	NA	5000	mg/kg
BY39-015	749153.832	2082253.194	2.0	2.2	TPH	716.00	170.00	NA	5000	mg/kg
BY39-016	749146.422	2082277.078	2.0	2.2	TPH	1630.00	346.00	NA	5000	mg/kg

## KEY

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Scale = 1: 2200

State Plane Coordinate Projection  
Colorado Central Zone  
Datum: NAD 27

U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Prepared by:

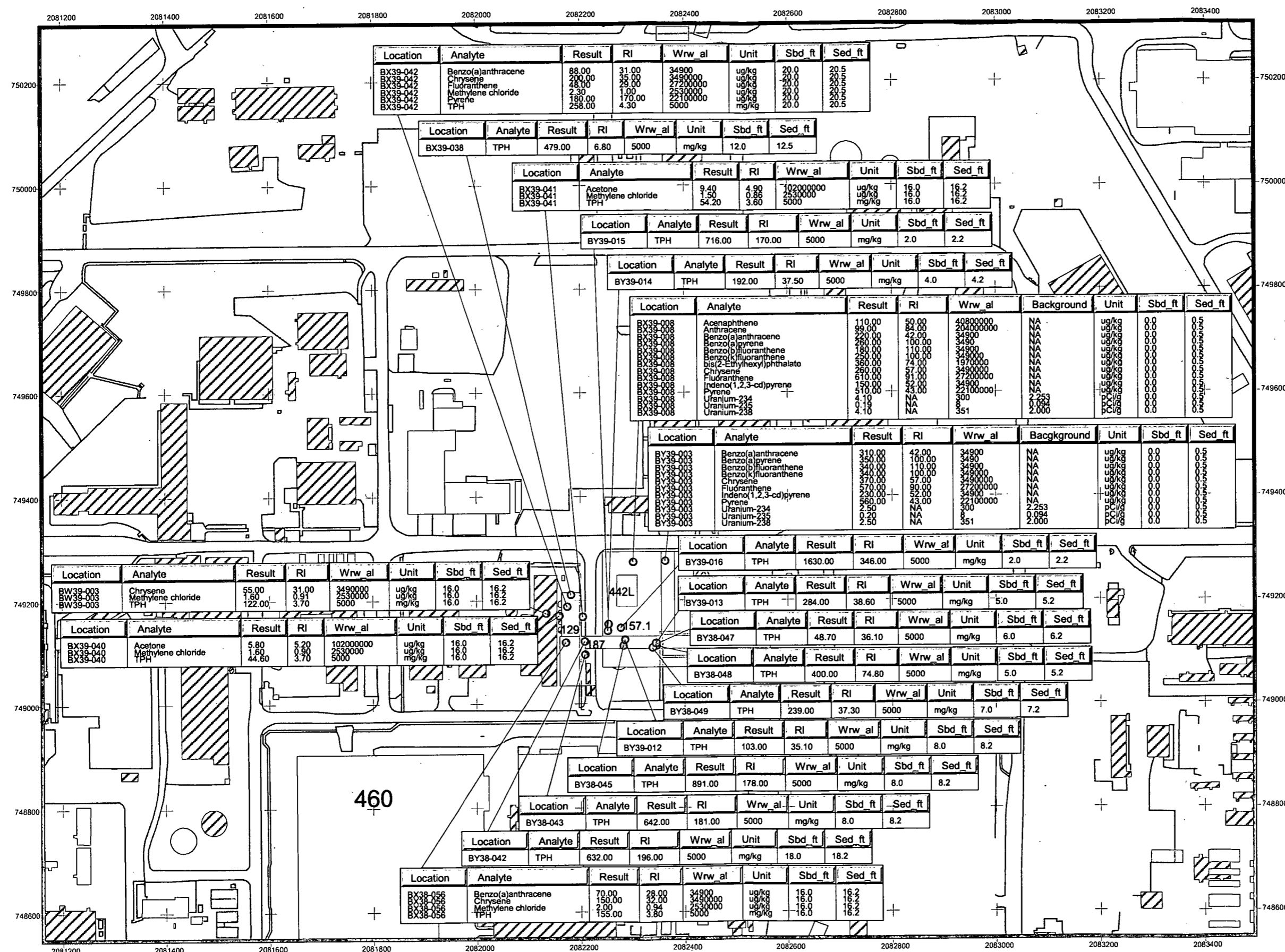
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**Table 10**  
**Sums of Ratios Based on Radionuclide Activities in Confirmation Soil Samples**

Location Code	Northing	Easting	SBD (ft)	SED (ft)	SOR
BX39-008	749272.980	2082301.060	0	0.5	0.049
BY39-003	749275.404	2082363.414	0	0.5	0.040

THIS TARGET SHEET REPRESENTS AN  
OVER-SIZED MAP / PLATE FOR THIS DOCUMENT:  
(Ref: 05-RF-00066; KLW-003-05)

**Closeout Report for IHSS Group 400-7**  
**UBC 442, IHSS 400-129, IHSS 400-157.1, and**  
**IHSS 400-187**

**December 2004**

**Figure 10:**

**Residual Contamination in Surface  
and Subsurface Soil, Eastern Portion  
of IHSS Group 400-7**

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**December 28, 2004**

**CERCLA Administrative Record Document, IA-A-002524**

**U.S. DEPARTEMENT OF ENERGY  
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**Closeout Report for IHSS Group 400-7**  
**UBC 442, IHSS 400-129, IHSS 400-157.1, and**  
**IHSS 400-187**

**December 2004**

**Figure 11:**

**Residual Contamination in Surface  
and Subsurface Soil, North-Central  
Portion of IHSS Group 400-7**

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**December 28, 2004**

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**Closeout Report for IHSS Group 400-7**  
**UBC 442, IHSS 400-129, IHSS 400-157.1, and**  
**IHSS 400-187**

**December 2004**

**Figure 12:**

**Residual Contamination in Surface  
and Subsurface Soil, Northwestern  
Portion of IHSS Group 400-7**

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**December 28, 2004**

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**Closeout Report for IHSS Group 400-7**  
**UBC 442, IHSS 400-129, IHSS 400-157.1, and**  
**IHSS 400-187**

**December 2004**

**Figure 13:**

**Residual Contamination in Surface  
and Subsurface Soil, Southwestern  
Portion of IHSS Group 400-7**

**File: W:\Projects\Fy2004\400-7\400\_7\_residual\_contamination.apr**

**December 28, 2004**

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## **6.0 SUBSURFACE SOIL RISK SCREEN**

The SSRS follows the steps identified on Figure 3 in Attachment 5 of RFCA (DOE et al. 2003).

### **Screen 1 – Are the contaminants of concern concentrations below RFCA Table 3 soil ALs for the WRW?**

Yes. All residual COC concentrations in subsurface soil are less than the WRW ALs.

### **Screen 2 – Is there a potential for subsurface soil to become surface soil (landslides and erosion areas identified on Figure 1 of the RFCA Modification)?**

No. IHSS Group 400-7 is not located in an area susceptible to landslides or high erosion (Figure 1 of RFCA Attachment 5) (DOE et al. 2003).

### **Screen 3 – Does subsurface soil contamination for radionuclides exceed criteria defined in RFCA Section 5.3 and Attachment 14?**

No. All residual radionuclide activities are less than the criteria defined in RFCA Section 5.3 and Attachment 14.

### **Screen 4 - Is there an environmental pathway and sufficient quantity of COCs that would cause an exceedance of surface water standards?**

No. Contaminant migration via surface runoff and groundwater are two possible pathways whereby surface water could become contaminated from IHSS Group 400-7 COCs. Runoff from IHSS Group 400-7 flows north into the Central Avenue Ditch (DOE 2003a). Flow in the ditch travels through Gauging Station 38 (GS38) and then GS10, which is the nearest RFCA surface water Point of Evaluation. Median COC concentrations at GS38 have not exceeded surface water ALs between FY97 and FY02 (DOE 2003a). Plutonium-239/240 and americium-241 activities have exceeded surface water ALs at GS10; however, GS10 receives water from a large part of the IA, and surface water quality at GS10 cannot be attributable to any single IHSS Group. In addition, plutonium-239/240 and americium-241 activities in soil are not elevated at IHSS Group 400-7.

Groundwater contamination in the IHSS Group 400-7 area, primarily due to the VOC plume (DOE 2003b), probably has multiple sources within the IA. However, VOC concentrations in soil within the IHSS Group do not exceed soil ALs and are not considered a significant factor in groundwater contamination at this location. In addition, while residual COC concentrations in the IHSS Group (Figures 10 through 13) could impact surface water, the lack of a significant pathway (Screen 2) makes this unlikely, especially because the site was backfilled and regraded after remediation. The groundwater-to-surface water pathway is evaluated in the Groundwater Interim Measure/Interim Remedial Action decision document, and further groundwater evaluation will be conducted as part of the groundwater remedial decision and future Sitewide evaluation.

## **7.0 STEWARDSHIP ANALYSIS**

The stewardship evaluation applicable to IHSS Group 400-7 is documented in the following sections. The regulatory agencies were informed of project activities and

characterization results through frequent project updates, e-mails, telephone contacts, and personal contact throughout the project duration. Many of these activities and results affect stewardship decisions. Copies of Regulatory Contact Records are provided in Appendix B.

### **7.1 Current Site Conditions**

As discussed in Section 3.1, the Building 442 slab, sumps, scale pit, footer walls, and footers were removed, as well as all sanitary/process lines located under the slab and the Building 452 slab. The section of waste line west of the building, which connected the building to the main sewer line, was left in place. The section is approximately 30 ft long and consists of 6-inch cast iron. It is assumed that the line is internally contaminated. No contamination was found outside the line. Most of the line that exited the W section of Building 442 was also left in place. This section of line was surveyed, and no radioactivity was detected. The ends of the remaining sections were filled with foam. In addition, the four fuel oil tanks east of Building 443 and oil-contaminated soil were removed. Items within the associated excavation were removed, including sections of the NPWL, sanitary sewer, storm sewer, steam, and water systems; all of Valve Vault 16 and the top 4 ft of Valve Vault 17; two emergency generator USTs; small concrete structures and area asphalt; and asbestos insulation. Remaining items include the concrete tank supports, a Building 443 concrete boiler foundation, and a Building 443 concrete pipe chase. After items were removed, excavations were backfilled with clean soil, and the area was graded. Removed and remaining structures are presented in Section 3.1 and on Figure 8. Remaining NPWL and sanitary lines are being addressed based on Sitewide decisions regarding the NPWL and the sanitary system.

Based on the accelerated action, current conditions at IHSS Group 400-7 are listed below:

- Potential sources of contamination that existed in IHSS Group 400-7 were removed, including slab sections, sumps, the scale pit, waste lines, fuel oil tanks, asbestos insulation, and contaminated soil (Section 3.1).
- One contaminated waste line section, located west of the Building 442 slab, and one uncontaminated section, located north of the Building 442 slab, remain 3 ft bgs.
- Excavations were backfilled with clean fill to current grade.
- Remaining ends of NPWL and sewer lines were grouted, and remaining ends of water lines were capped.
- Residual surface and subsurface contaminant concentrations in soil are greater than background means plus two standard deviations or RLs throughout the IHSS Group.
- Residual surface and subsurface contaminant concentrations are less than RFCA WRW ALs.

## **7.2 Near-Term Management Recommendations**

No IHSS Group-specific, near-term management techniques are required. Contaminant concentrations in soil remaining at IHSS Group 400-7 do not trigger any further accelerated action. Site-wide, near-term recommendations include the following:

- Excavation at the site will continue to be controlled through the Site Soil Disturbance Permit process;
- Access will be restricted to minimize disturbance to newly revegetated areas; and
- Site access and security controls and the Soil Disturbance Permit process will remain in place pending implementation of long-term controls.

## **7.3 Long-Term Stewardship Recommendations**

Based on remaining environmental conditions at IHSS Group 400-7, no IHSS Group-specific long-term stewardship activities are recommended beyond the generally applicable Site requirements. These requirements may be imposed on this area in the future. Institutional controls that will be used as appropriate for this area include the following:

- Prohibitions on construction of buildings in the IA;
- Restrictions on excavation or other soil disturbance; and
- Prohibitions on groundwater pumping in the area of IHSS Group 400-7.

No IHSS Group-specific engineered controls or environmental monitoring are recommended as a result of the conditions remaining at IHSS Group 400-7. Likewise, no specific institutional or physical controls are recommended as a result of the conditions remaining at IHSS Group 400-7.

This Closeout Report and associated documentation will be retained as part of the Rocky Flats Administrative Record (AR) file. The specific long-term stewardship recommendations will also be summarized in the Rocky Flats Long-Term Stewardship Strategy.

IHSS Group 400-7 will be evaluated as part of the Site-wide CRA, which is part of the RCRA Remedial Investigation/Feasibility Study (RI/FS) that will be conducted for the Site. The need for and extent of any more general, long-term stewardship activities will also be evaluated in the RI/FS and proposed as part of the preferred alternative in the Proposed Plan for the Site. Institutional controls and other long-term stewardship requirements for Rocky Flats will be contained in the Corrective Action Decision/Record of Decision.

## **8.0 DEVIATIONS FROM THE ER RSOP**

Removal methods and objectives did not deviate from the ER RSOP (DOE 2002b) or ER RSOP Notification #02-06 (DOE 2002c).

## **9.0 RCRA UNIT CLOSURE**

The NPWL and valve vaults within IHSS Group 400-7, shown on Figure 8, are part of RCRA Unit 374.3 and were clean-closed in accordance with the closure description

documents for that unit (DOE 2002d). Closure activities will be documented in a separate closure summary report for RCRA Unit 374.3. In addition, fuel oil Tank No. 4 was previously RCRA closed (Sections 2.2 and 3.1) (DOE 1992-2003).

## **10.0 WASTE MANAGEMENT**

Waste from the IHSS Group 400-7 accelerated action consisted of concrete, pipeline, fuel oil tanks, tank sludge, foamed USTs, asbestos debris, asphalt, and oil- and SVOC-contaminated soil. Clean concrete was segregated; some was disposed of as sanitary waste, and some was recycled in accordance with the RSOP for Recycling Concrete (DOE 1999a). Contaminated concrete was loaded into waste cargo containers for disposal as LLW. Process waste lines were placed in metal boxes for disposal as LLMW. The oil tanks, fuel oil and water mixture from the tanks, tank sludge, USTs, asphalt, and contaminated soil were disposal of as sanitary waste. Approximately 15 cu ft of asbestos waste was generated during 2002 (managed as LLW) and approximately 1 cu yd during 2004 (managed as sanitary waste). Waste volumes are presented in Table 11 by waste type.

**Table 11**  
**IHSS Group 400-7 Waste Summary**

<b>Type of Waste</b>	<b>Volume In 2002</b>	<b>Volume In 2004</b>
LLMW	224 cu ft	0
LLW	3,585 cu ft	0
Sanitary	288 cu yd	14,080 cu yd
Sanitary	0	30,000 gallons
Recycled	792 cu yd	0

## **11.0 SITE RECLAMATION**

All excavated areas were backfilled and re-graded. During the winter of 2005 the area will be seeded, and hydromulch will be applied to conserve moisture and prevent seed erosion. Approximately 15,000 cubic yards of clean dirt was brought to the project area to backfill the 2004 excavation and achieve final grade for the area. The fill came from the pile west of Building 371 (south of First and Sage Streets).

## **12.0 NO LONGER REPRESENTATIVE SAMPLING LOCATIONS**

Historical and accelerated action sampling locations were removed during the IHSS Group 400-7 accelerated action and are considered NLR. Most of the locations were disturbed during the 2004 activities to remove the fuel oil tanks and oil-contaminated soil. Characterization Sampling Locations BX39-008 and BY39-003 were also disturbed when SVOC-contaminated soil was removed during 2002. However, confirmation samples at the same locations are representative. They were collected from the bottom of the excavations created when the SVOC-contaminated soil was removed. The excavation bottoms were between 18 and 24 inches bgs; however, confirmation sample depths are

recorded in SWD as 0.0 to 0.5 ft. All NLR sampling locations are listed in Table 12. NLR data have been marked in SWD and will not be used in the CRA or other site analyses.

**Table 12**  
**IHSS Group 400-7 No Longer Representative Sampling Locations**

Sampling Location	Easting	Northing
SED0020101	2082407.634	749286.503
SED0030101	2082745.911	749286.190
SS016393	2082201.000	749153.000
SS016493	2082199.000	749159.000
SS016593	2082198.000	749145.000
SS016693	2082186.000	749160.000
SS016793	2082185.000	749154.000
SS016893	2082184.000	749143.000
SS016993	2082168.000	749160.000
SS017093	2082168.000	749150.000
SS017193	2082168.000	749143.000
SS230393	2082174.000	749095.000
SS230493	2082172.620	749083.787
SS230593	2082193.508	749109.316
SS230693	2082185.000	749095.000
SS230793	2082183.296	749076.051
SS301093	2082334.000	749117.000
SS301193	2082295.000	749082.000
SS301293	2082288.281	749126.138
SS301393	2082240.610	749111.914
BW38-009	2082215.962	749194.732
BW39-002	2082134.014	749168.667
BX38-000	2082252.815	749140.261
BX38-002	2082248.518	749084.873
BX38-003	2082276.584	749145.208
BX38-005	2082275.820	749145.643
BX38-007	2082195.703	749069.640
BX38-009	2082185.084	749087.398
BX38-011	2082218.219	749130.966
BX38-013	2082184.036	749163.623
BX38-014	2082170.131	749164.247
BX38-015	2082175.998	749142.147
BX38-016	2082187.854	749142.962
BX38-018	2082192.755	749107.465
BX38-019	2082184.921	749120.898
BX38-020	2082169.741	749118.375
BX38-038	2082158.845	749153.290
BX38-039	2082175.807	749107.801
BX38-040	2082209.629	749116.885
BX38-041	2082208.348	749153.323
BX38-042	2082204.411	749096.043
BX38-043	2082227.424	749115.424
BX38-044	2082175.169	749093.619
BX38-045	2082239.069	749116.424
BX38-055	2082167.028	749121.465
BX38-057	2082262.706	749131.037

Sampling Location	Easting	Northing
BX39-000	2082243.740	749162.020
BX39-008A & B	2082301.060	749272.980
BX39-017	2082199.570	749183.380
BX39-029	2082179.741	749183.305
BX39-030	2082176.448	749219.778
BX39-035	2082172.897	749189.786
BX39-036	2082202.156	749170.130
BX39-037	2082162.975	749171.154
BY38-002	2082339.740	749109.548
BY39-003A & B	2082372.028	749076.556

### **13.0 DATA QUALITY ASSESSMENT**

The DQOs for this project are described in the IASAP (DOE 2001). All DQOs for this project were achieved based on the following:

- Regulatory agency-approved sampling program design (IASAP Addendum #IA-02-05 [DOE 2002a]), modified due to field conditions, in accordance with the IASAP (DOE 2001);
- Collection of samples in accordance with the sampling design; and
- Results of the DQA, as described in the following sections.

#### **13.1 Data Quality Assessment Process**

The DQA process ensures that the type, quantity, and quality of environmental data used in decision making are defensible, and is based on the following guidance and requirements:

- U.S. Environmental Protection Agency (EPA), 1994a, Guidance for the Data Quality Objective Process, QA/G-4;
- EPA, 1998, Guidance for the Data Quality Assessment Process, Practical Methods for Data Analysis, QA/G-9; and
- U.S. Department of Energy (DOE), 1999b, Quality Assurance, Order 414.1A.

Verification and validation (V&V) of data are the primary components of the DQA. The final data are compared with original project DQOs and evaluated with respect to project decisions; uncertainty within the decisions; and quality criteria required for the data, specifically precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS). Validation criteria are consistent with the following RFETS-specific documents and industry guidelines:

- EPA, 1994b, USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, 540/R-94/012;

- EPA, 1994c, USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, 540/R-94/013;
- Kaiser-Hill Company, L.L.C. (K-H), 2002a, General Guidelines for Data Verification and Validation, DA-GR01-v2, October;
- K-H, 2002b, V&V Guidelines for Isotopic Determinations by Alpha Spectrometry, DA-RC01-v2, October;
- K-H, 2002c, V&V Guidelines for Volatile Organics, DA-SS01-v3, October;
- K-H, 2002d, V&V Guidelines for Semivolatile Organics, DA-SS02-v3, October;
- K-H, 2002e, V&V Guidelines for Metals, DA-SS05-v3, October; and
- Lockheed-Martin, 1997, Evaluation of Radiochemical Data Usability, ES/ER/MS-5.

This report will be submitted to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) AR for permanent storage 30 days after being provided to CDPHE and/or EPA.

### **13.2 Verification and Validation of Results**

Verification ensures that data produced and used by the project are documented and traceable in accordance with quality requirements. Validation consists of a technical review of all data that directly support the project decisions so that any limitations of the data relative to project goals are delineated and the associated data are qualified accordingly. The V&V process defines the criteria that constitute data quality, namely PARCCS parameters. Data traceability and archival are also addressed. V&V criteria include the following:

- Chain-of-custody;
- Preservation and hold times;
- Instrument calibrations;
- Preparation blanks;
- Interference check samples (metals);
- Matrix spikes/matrix spike duplicates (MS/MSDs);
- Laboratory control samples (LCSs);
- Field duplicate measurements;
- Chemical yield (radiochemistry);

- Required quantitation limits/minimum detectable activities (sensitivity of chemical and radiochemical measurements, respectively); and
- Sample analysis and preparation methods.

Evaluation of V&V criteria ensures that PARCCS parameters are satisfactory (that is, within tolerances acceptable to the project). Satisfactory V&V of laboratory quality controls are captured through application of validation "flags" or qualifiers to individual records.

Raw hard-copy data (for example, individual analytical data packages) are currently filed by report identification number and maintained by K-H Analytical Services Division; older hard copies may reside in the Federal Center in Lakewood, Colorado. Electronic data are stored in SWD.

Both real and QC data are included on the enclosed CD.

### 13.2.1 Accuracy

The following measures of accuracy were evaluated:

- LCSs;
- Surrogates;
- Field blanks; and
- Sample MSs.

Results are compared to method requirements and project goals. The results of these comparisons are summarized for RFCA COCs where the result could impact project decisions. Particular attention is paid to those values near ALs when QC results could indicate unacceptable levels of uncertainty for decision-making purposes.

#### *Laboratory Control Sample Evaluation*

As indicated in Table 13, LCS analyses were run for all methods except gamma spectroscopy. When the In-Situ Counting System (ISOCs) technique is used for gamma spectroscopy, an internal standard approach is used instead of LCSs. The onsite laboratory that performs gamma spectroscopy is therefore not required to provide LCS data.

**Table 13**  
**LCS Summary**

Test Method	Laboratory Batch	LCS Run?
Alpha Spec	184255	Yes
Alpha Spec	184256	Yes
Alpha Spec	184257	Yes
Alpha Spec	269315	Yes
Alpha Spec	269317	Yes
Alpha Spec	273807	Yes

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Test Method	Laboratory Batch	LCS Run?
Alpha Spec	353989	Yes
Alpha Spec	353991	Yes
Alpha Spec	357524	Yes
Alpha Spec	357526	Yes
Alpha Spec	357528	Yes
Alpha Spec	358819	Yes
Alpha Spec	358841	Yes
Alpha Spec	358844	Yes
Alpha Spec	361428	Yes
Alpha Spec	4224566	Yes
Alpha Spec	4224567	Yes
Alpha Spec	4224568	Yes
Alpha Spec	4289356	Yes
Alpha Spec	4289359	Yes
Alpha Spec	4289363	Yes
SW-846 6010	3213315	Yes
SW-846 6010	3213327	Yes
SW-846 6010	3216466	Yes
SW-846 6010	3216471	Yes
SW-846 6010	3219342	Yes
SW-846 6010	3220235	Yes
SW-846 6010	3233469	Yes
SW-846 6010	3233537	Yes
SW-846 6010	3248347	Yes
SW-846 6010	3248379	Yes
SW-846 6010	4220056	Yes
SW-846 6010	4220116	Yes
SW-846 6010	4225545	Yes
SW-846 6010	4229123	Yes
SW-846 6010	4232455	Yes
SW-846 6010	4232611	Yes
SW-846 6010	4267651	Yes
SW-846 6010	4271546	Yes
SW-846 6010	4280364	Yes
SW-846 6010	4280559	Yes
SW-846 6010	4288655	Yes
SW-846 6010	4289427	Yes
SW-846 6010/6010B	2170220	Yes
SW-846 6010/6010B	2171445	Yes
SW-846 6010/6010B	2175187	Yes
SW-846 6010/6010B	2178406	Yes
SW-846 6010/6010B	2178442	Yes
SW-846 6010/6010B	2179363	Yes
SW-846 6010/6010B	2179366	Yes

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Test Method	Laboratory Batch	LCS Run?
SW-846 6010/6010B	2184209	Yes
SW-846 6010/6010B	2184210	Yes
SW-846 6010/6010B	2186303	Yes
SW-846 6010/6010B	2186323	Yes
SW-846 6010/6010B	2186325	Yes
SW-846 6010/6010B	2190373	Yes
SW-846 6010/6010B	2192202	Yes
SW-846 6010/6010B	2192435	Yes
SW-846 6010/6010B	2193390	Yes
SW-846 6010/6010B	2194162	Yes
SW-846 6010/6010B	2196214	Yes
SW-846 6010/6010B	2197462	Yes
SW-846 6010/6010B	2198497	Yes
SW-846 6010/6010B	2198505	Yes
SW-846 6010/6010B	2200312	Yes
SW-846 6010/6010B	2203512	Yes
SW-846 6010/6010B	2203594	Yes
SW-846 6010/6010B	2204474	Yes
SW-846 6010/6010B	2205228	Yes
SW-846 8082	2218136	Yes
SW-846 8260	2171349	Yes
SW-846 8260	2176253	Yes
SW-846 8260	2177458	Yes
SW-846 8260	2179396	Yes
SW-846 8260	2191418	Yes
SW-846 8260	2192247	Yes
SW-846 8260	2193405	Yes
SW-846 8260	2195134	Yes
SW-846 8260	2196521	Yes
SW-846 8260	2198231	Yes
SW-846 8260	3216214	Yes
SW-846 8260	3217288	Yes
SW-846 8260	3218284	Yes
SW-846 8260	3220304	Yes
SW-846 8260	3224277	Yes
SW-846 8260	3234245	Yes
SW-846 8260	3239320	Yes
SW-846 8260	4219154	Yes
SW-846 8260	4225468	Yes
SW-846 8260	4233251	Yes
SW-846 8260	4267274	Yes
SW-846 8260	4281507	Yes
SW-846 8260	MS1 VOA 041012A	Yes
SW-846 8260	MS3 VOA 020715A	Yes

Test Method	Laboratory Batch	LCS Run?
SW-846 8260	MS3 VOA 020716A	Yes
SW-846 8260	MS3 VOA 020717A	Yes
SW-846 8260	MS3 VOA 020718A	Yes
SW-846 8260	MS3 VOA 020723A	Yes
SW-846 8260	MS3 VOA 020724A	Yes
SW-846 8260	MS3 VOA 020724B	Yes
SW-846 8260	MS3 VOA 020729A	Yes
SW-846 8260	MS3 VOA 020730A	Yes
SW-846 8260	MS3 VOA 020731A	Yes
SW-846 8260	MS3 VOA 030905A	Yes
SW-846 8270	3216468	Yes
SW-846 8270	3219333	Yes
SW-846 8270	3248545	Yes
SW-846 8270	4272409	Yes
SW-846 8270	4281360	Yes
SW-846 8270B	2174106	Yes
SW-846 8270B	2176154	Yes
SW-846 8270B	2182174	Yes
SW-846 8270B	2186173	Yes
SW-846 8270B	2186175	Yes
SW-846 8270B	2193122	Yes
SW-846 8270B	2193463	Yes
SW-846 8270B	2194147	Yes
SW-846 8270B	2197151	Yes
SW-846 8270B	2198509	Yes
SW-846 8270B	2199142	Yes
SW-846 8270B	2203508	Yes
SW-846 8270B	2204459	Yes
SW-846 8270B	2213400	Yes
SW-846 8270B	2218121	Yes
SW-846 8270B	2239178	Yes

The minimum and maximum LCS results are tabulated, by chemical, for the entire project in Table 14. LCS results that were outside of tolerances were reviewed to determine whether a potential bias might be indicated. LCS recoveries are not indicative of matrix effects because they are not prepared using site samples. LCS results do indicate whether the laboratory may be introducing a bias in the results. Recoveries reported above the upper limit may indicate the actual sample results are less than reported. Because this is environmentally conservative, no further action is needed. The analytes with unacceptable low recoveries were evaluated. If the highest sample result divided by the lowest LCS recovery for that analyte is less than the AL, no further action is taken because any indicated bias is not great enough to affect project decisions. As a result of this analysis, the LCS recoveries for this project did not impact project decisions.

**Table 14**  
**LCS Evaluation Summary**

Test Method	CAS No.	Analyte	Min. Result	Max. Result	Unit
SW-846 8260	71-55-6	1,1,1-Trichloroethane	86	115	%REC
SW-846 8260	79-34-5	1,1,2,2-Tetrachloroethane	76	138	%REC
SW-846 8260	79-00-5	1,1,2-Trichloroethane	86	129.5	%REC
SW-846 8260	75-34-3	1,1-Dichloroethane	89	117.6	%REC
SW-846 8260	75-35-4	1,1-Dichloroethene	78	118.4	%REC
SW-846 8260	120-82-1	1,2,4-Trichlorobenzene	79	127.1	%REC
SW-846 8270	120-82-1	1,2,4-Trichlorobenzene	65	73	%REC
SW-846 8270B	120-82-1	1,2,4-Trichlorobenzene	55	77	%REC
SW-846 8260	95-50-1	1,2-Dichlorobenzene	80	122.9	%REC
SW-846 8260	107-06-2	1,2-Dichloroethane	84	121	%REC
SW-846 8260	78-87-5	1,2-Dichloropropane	87	127.2	%REC
SW-846 8260	106-46-7	1,4-Dichlorobenzene	81	125.4	%REC
SW-846 8270B	106-46-7	1,4-Dichlorobenzene	55	74	%REC
SW-846 8270	95-95-4	2,4,5-Trichlorophenol	72	78	%REC
SW-846 8270	88-06-2	2,4,6-Trichlorophenol	71	78	%REC
SW-846 8270	120-83-2	2,4-Dichlorophenol	67	75	%REC
SW-846 8270	105-67-9	2,4-Dimethylphenol	66	76	%REC
SW-846 8270	51-28-5	2,4-Dinitrophenol	60	79	%REC
SW-846 8270	121-14-2	2,4-Dinitrotoluene	70	80	%REC
SW-846 8270B	121-14-2	2,4-Dinitrotoluene	54	88	%REC
SW-846 8270	606-20-2	2,6-Dinitrotoluene	71	78	%REC
SW-846 8260	78-93-3	2-Butanone	61.86	185.7	%REC
SW-846 8270	91-58-7	2-Chloronaphthalene	64	74	%REC
SW-846 8270	95-57-8	2-Chlorophenol	59	76	%REC
SW-846 8270B	95-57-8	2-Chlorophenol	59	80	%REC
SW-846 8270	91-57-6	2-Methylnaphthalene	67	73	%REC
SW-846 8270	95-48-7	2-Methylphenol	58	74	%REC
SW-846 8270	88-74-4	2-Nitroaniline	64	76	%REC
SW-846 8270	91-94-1	3,3'-Dichlorobenzidine	52	66	%REC
SW-846 8270	534-52-1	4,6-Dinitro-2-methylphenol	67	75	%REC
SW-846 8270	106-47-8	4-Chloroaniline	51	64	%REC
SW-846 8260	108-10-1	4-Methyl-2-pentanone	73.04	121	%REC
SW-846 8270	106-44-5	4-Methylphenol	59	76	%REC
SW-846 8270	100-02-7	4-Nitrophenol	70	81	%REC
SW-846 8270B	100-02-7	4-Nitrophenol	47	86	%REC
SW-846 8270B	83-32-9	Acenaphthene	51	80	%REC
SW-846 8270	83-32-9	Acenaphthene	63	72	%REC
SW-846 8260	67-64-1	Acetone	51.48	735.3	%REC
SW-846 6010	7429-90-5	Aluminum	93	106	%REC
SW-846 6010/6010B	7429-90-5	Aluminum	94	104	%REC
SW-846 8270	120-12-7	Anthracene	68	80	%REC
SW-846 6010/6010B	7440-36-0	Antimony	85	100	%REC

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Test Method	CAS No.	Analyte	Min. Result	Max. Result	Unit
SW-846 6010	7440-36-0	Antimony	83	101	%REC
SW-846 8082	12674-11-2	Aroclor-1016	81	81	%REC
SW-846 8082	11096-82-5	Aroclor-1260	91	91	%REC
SW-846 6010	7440-38-2	Arsenic	85	100	%REC
SW-846 6010/6010B	7440-38-2	Arsenic	91	99	%REC
SW-846 6010/6010B	7440-39-3	Barium	94	107	%REC
SW-846 6010	7440-39-3	Barium	95	102	%REC
SW-846 8260	71-43-2	Benzene	86	116.8	%REC
SW-846 8270	56-55-3	Benzo(a)anthracene	67	74	%REC
SW-846 8270	50-32-8	Benzo(a)pyrene	65	77	%REC
SW-846 8270	205-99-2	Benzo(b)fluoranthene	64	72	%REC
SW-846 8270	207-08-9	Benzo(k)fluoranthene	61	79	%REC
SW-846 8270	65-85-0	Benzoic acid	44	65	%REC
SW-846 8270	100-51-6	Benzyl alcohol	59	87	%REC
SW-846 6010	7440-41-7	Beryllium	96	107	%REC
SW-846 6010/6010B	7440-41-7	Beryllium	86	101	%REC
SW-846 8270	111-44-4	bis(2-Chloroethyl)ether	49	74	%REC
SW-846 8270	39638-32-9	bis(2-Chloroisopropyl)ether	43	82	%REC
SW-846 8270	117-81-7	bis(2-Ethylhexyl)phthalate	62	72	%REC
SW-846 8260	75-27-4	Bromodichloromethane	89.09	130.1	%REC
SW-846 8260	75-25-2	Bromoform	82.81	123.8	%REC
SW-846 8260	74-83-9	Bromomethane	64	122	%REC
SW-846 8270	85-68-7	Butylbenzylphthalate	62	74	%REC
SW-846 6010/6010B	7440-43-9	Cadmium	90	104	%REC
SW-846 6010	7440-43-9	Cadmium	88	100	%REC
SW-846 8260	75-15-0	Carbon disulfide	61	139.2	%REC
SW-846 8260	56-23-5	Carbon tetrachloride	83	116	%REC
SW-846 8260	108-90-7	Chlorobenzene	83	125.5	%REC
SW-846 8260	75-00-3	Chloroethane	73	117.1	%REC
SW-846 8260	67-66-3	Chloroform	89.08	116.6	%REC
SW-846 8260	74-87-3	Chloromethane	62	154	%REC
SW-846 6010	7440-47-3	Chromium	89	102	%REC
SW-846 6010/6010B	7440-47-3	Chromium	89	105	%REC
SW-846 8270	218-01-9	Chrysene	63	82	%REC
SW-846 8260	10061-01-5	cis-1,3-Dichloropropene	87.52	127.9	%REC
SW-846 6010/6010B	7440-48-4	Cobalt	86	102	%REC
SW-846 6010	7440-48-4	Cobalt	86	99	%REC
SW-846 6010	7440-50-8	Copper	88	99	%REC
SW-846 6010/6010B	7440-50-8	Copper	92	105	%REC
SW-846 8270	84-74-2	Di-n-butylphthalate	62	78	%REC
SW-846 8270	117-84-0	Di-n-octylphthalate	65	73	%REC
SW-846 8270	53-70-3	Dibenz(a,h)anthracene	67	85	%REC
SW-846 8270	132-64-9	Dibenzofuran	71	78	%REC
SW-846 8260	124-48-1	Dibromochloromethane	86.82	122.2	%REC

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Test Method	CAS No.	Analyte	Min. Result	Max. Result	Unit
SW-846 8270	84-66-2	Diethylphthalate	70	72	%REC
SW-846 8270	131-11-3	Dimethylphthalate	70	72	%REC
SW-846 8260	100-41-4	Ethylbenzene	85	129.8	%REC
SW-846 8270	206-44-0	Fluoranthene	69	79	%REC
SW-846 8270	86-73-7	Fluorene	68	73	%REC
SW-846 8270	118-74-1	Hexachlorobenzene	74	78	%REC
SW-846 8260	87-68-3	Hexachlorobutadiene	79.43	133.3	%REC
SW-846 8270	87-68-3	Hexachlorobutadiene	66	75	%REC
SW-846 8270	77-47-4	Hexachlorocyclopentadiene	59	69	%REC
SW-846 8270	67-72-1	Hexachloroethane	58	72	%REC
SW-846 8270	193-39-5	Indeno(1,2,3-cd)pyrene	68	78	%REC
SW-846 6010/6010B	7439-89-6	Iron	93	109	%REC
SW-846 6010	7439-89-6	Iron	96	103	%REC
SW-846 8270	78-59-1	Isophorone	62	73	%REC
SW-846 6010	7439-92-1	Lead	91	102	%REC
SW-846 6010/6010B	7439-92-1	Lead	92	104	%REC
SW-846 6010/6010B	7439-93-2	Lithium	94	104	%REC
SW-846 6010	7439-93-2	Lithium	93	102	%REC
SW-846 6010	7439-96-5	Manganese	89	100	%REC
SW-846 6010/6010B	7439-96-5	Manganese	89	105	%REC
SW-846 6010/6010B	7439-97-6	Mercury	93	102	%REC
SW-846 6010	7439-97-6	Mercury	93	102	%REC
SW-846 8260	75-09-2	Methylene chloride	86	114.5	%REC
SW-846 6010	7439-98-7	Molybdenum	86	99	%REC
SW-846 6010/6010B	7439-98-7	Molybdenum	81	101	%REC
SW-846 8270	86-30-6	n-Nitrosodiphenylamine	73	78	%REC
SW-846 8270	621-64-7	n-Nitrosodipropylamine	55	73	%REC
SW-846 8270B	621-64-7	n-Nitrosodipropylamine	56	85	%REC
SW-846 8270	91-20-3	Naphthalene	63	74	%REC
SW-846 8260	91-20-3	Naphthalene	79	128.6	%REC
SW-846 6010/6010B	7440-02-0	Nickel	92	104	%REC
SW-846 6010	7440-02-0	Nickel	89	102	%REC
SW-846 8270	98-95-3	Nitrobenzene	53	73	%REC
SW-846 8270B	87-86-5	Pentachlorophenol	35	72	%REC
SW-846 8270	87-86-5	Pentachlorophenol	53	78	%REC
SW-846 8270B	108-95-2	Phenol	62	80	%REC
SW-846 8270	108-95-2	Phenol	55	76	%REC
SW-846 8270	129-00-0	Pyrene	62	75	%REC
SW-846 8270B	129-00-0	Pyrene	52	77	%REC
SW-846 6010	7782-49-2	Selenium	84	102	%REC
SW-846 6010/6010B	7782-49-2	Selenium	92	102	%REC
SW-846 6010	7440-22-4	Silver	86	104	%REC
SW-846 6010/6010B	7440-22-4	Silver	95	109	%REC
SW-846 6010/6010B	7440-24-6	Strontium	94	107	%REC

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Test Method	CAS No.	Analyte	Min. Result	Max. Result	Unit
SW-846 6010	7440-24-6	Strontium	92	103	%REC
SW-846 8260	100-42-5	Styrene	85	139.3	%REC
SW-846 8260	127-18-4	Tetrachloroethene	80	117.1	%REC
SW-846 6010	7440-31-5	Tin	81	99	%REC
SW-846 6010/6010B	7440-31-5	Tin	85	101	%REC
SW-846 8260	108-88-3	Toluene	85	123.4	%REC
SW-846 8260	10061-02-6	trans-1,3-Dichloropropene	88.86	128.1	%REC
SW-846 8260	79-01-6	Trichloroethene	84	124.1	%REC
SW-846 6010	11-09-6	Uranium, Total	92	104	%REC
SW-846 6010/6010B	11-09-6	Uranium, Total	93	111	%REC
SW-846 6010/6010B	7440-62-2	Vanadium	84	106	%REC
SW-846 6010	7440-62-2	Vanadium	89	100	%REC
SW-846 8260	75-01-4	Vinyl chloride	71	131.3	%REC
SW-846 8260	1330-20-7	Xylene	80.14	119.7	%REC
SW-846 6010	7440-66-6	Zinc	82	102	%REC
SW-846 6010/6010B	7440-66-6	Zinc	84	100	%REC

### Surrogate Evaluation

The frequency of surrogate measurements, relative to each laboratory batch, is given in Table 15. Surrogate frequency was adequate based on at least one set per sample. The minimum and maximum surrogate results are also tabulated, by chemical, for the entire project. Surrogates are added to every sample, and therefore, surrogate recoveries only impact individual samples. Unacceptable surrogate recoveries can indicate potential matrix effects. The highest and lowest surrogate recoveries for this project were reviewed, and no results affected project decisions. All organic compounds with surrogate recoveries had concentrations less than reporting limits.

**Table 15**  
**Surrogate Recovery Summary**

VOC Surrogate Recoveries				
Number of Samples	Analyte	Minimum Concentration	Maximum Concentration	Unit
86	4-Bromofluorobenzene	77.78	119	%REC
86	Deuterated 1,2-dichloroethane	82	127	%REC
86	Deuterated toluene	83.33	113	%REC
SVOC Surrogate Recoveries				
Number of Samples	Analyte	Minimum Concentration	Maximum Concentration	Unit
120	2-Fluorobiphenyl	46	79	%REC
120	2-Fluorophenol	43	91	%REC
120	Deuterated nitrobenzene	46	91	%REC
120	p-Terphenyl-d14	39	89	%REC

### Field Blank Evaluation

Results of the field blank analyses are given in Table 16. Detectable amounts of contaminants within the blanks, which could indicate possible cross-contamination of samples, are evaluated if the same contaminant is detected in the associated real samples. When the real result is less than 10 times the blank result for laboratory contaminants and 5 times the result for non-laboratory contaminants, the real result is eliminated. None of the chemicals were detected in the blanks at concentrations greater than one-tenth the AL. Therefore, blank contamination did not adversely impact project decisions.

**Table 16**  
**Field Blank Summary**

Laboratory	CAS No.	Analyte	Sample QC Code	Detected Result	Unit
URS	78-93-3	2-Butanone	RNS	5	ug/L
URS	108-88-3	Toluene	FB	2	ug/L
URS	108-88-3	Toluene	RNS	2	ug/L
URS	108-88-3	Toluene	TB	2	ug/L
URS	15117-96-1	Uranium-235	FB	0.174	pCi/g
URS	15117-96-1	Uranium-235	RNS	0.245	pCi/g
CMLS	15117-96-1	Uranium-235	RNS	0.0591	pCi/g
CMLS	7440-61-1	Uranium-238	RNS	0.992	pCi/g
URS	7440-61-1	Uranium-238	FB	2.51	pCi/g
URS	7440-61-1	Uranium-238	RNS	5.01	pCi/g
URS	1330-20-7	Xylene	TB	2.6	ug/L

Field blank (EB = equipment, FB = field, RNS = rinse, TB = trip) results greater than detection limits (not "U" qualified).

### **Sample Matrix Spike Evaluation**

The minimum and maximum MS results are summarized by chemical for the entire project in Table 17. Organic analytes with unacceptable low recoveries resulted in a review of the LCS recoveries. According to the EPA data validation guidelines (EPA 1994b), if organic MS recoveries are low, the data reviewer may use the MS and MSD results in conjunction with other QC criteria. For this project, the LCS recoveries were checked, and these checks indicate no decisions were impacted for organic analytes. For inorganics, the associated maximum sample results were divided by the lowest percent recovery for each analyte. If the resulting number was less than the AL, decisions were not impacted, and no action was taken. For this project, all results were acceptable. The low recoveries for copper, iron and manganese were 0, and the low recovery for antimony was 26 percent. However, the WRW ALs for these metals are at least three times greater than the highest sample result (Tables 4 and 5), thus no decisions were impacted.

**Table 17**  
**Sample MS Evaluation Summary**

Test Method	CAS No.	Analyte	Min. Result	Max. Result	Unit	No. of Samples	No. of Lab Batches
SW-846 8260	71-55-6	1,1,1-Trichloroethane	76	106	%REC	9	9
SW-846 8260	79-34-5	1,1,2,2-Tetrachloroethane	65.61	114	%REC	9	9
SW-846 8260	79-00-5	1,1,2-Trichloroethane	70.68	102	%REC	9	9
SW-846 8260	75-34-3	1,1-Dichloroethane	76.39	100	%REC	9	9
SW-846 8260	75-35-4	1,1-Dichloroethene	75	104	%REC	14	14
SW-846 8260	120-82-1	1,2,4-Trichlorobenzene	60.96	99	%REC	9	9
SW-846 8270	120-82-1	1,2,4-Trichlorobenzene	59	65	%REC	3	3
SW-846 8270B	120-82-1	1,2,4-Trichlorobenzene	53	72	%REC	9	9
SW-846 8260	95-50-1	1,2-Dichlorobenzene	70.32	106	%REC	9	9
SW-846 8260	107-06-2	1,2-Dichloroethane	80	115	%REC	9	9
SW-846 8260	78-87-5	1,2-Dichloropropane	71.21	95	%REC	9	9
SW-846 8260	106-46-7	1,4-Dichlorobenzene	68.2	105	%REC	9	9
SW-846 8270B	106-46-7	1,4-Dichlorobenzene	52	70	%REC	9	9
SW-846 8270	95-95-4	2,4,5-Trichlorophenol	66	77	%REC	3	3
SW-846 8270	88-06-2	2,4,6-Trichlorophenol	69	75	%REC	3	3
SW-846 8270	120-83-2	2,4-Dichlorophenol	62	67	%REC	3	3
SW-846 8270	105-67-9	2,4-Dimethylphenol	66	74	%REC	3	3
SW-846 8270	51-28-5	2,4-Dinitrophenol	26	62	%REC	3	3
SW-846 8270	121-14-2	2,4-Dinitrotoluene	70	80	%REC	3	3
SW-846 8270B	121-14-2	2,4-Dinitrotoluene	52	86	%REC	9	9
SW-846 8270	606-20-2	2,6-Dinitrotoluene	69	78	%REC	3	3
SW-846 8260	78-93-3	2-Butanone	44.59	140.3	%REC	9	9
SW-846 8270	91-58-7	2-Chloronaphthalene	66	69	%REC	3	3
SW-846 8270	95-57-8	2-Chlorophenol	62	68	%REC	3	3
SW-846 8270B	95-57-8	2-Chlorophenol	57	80	%REC	9	9
SW-846 8270	91-57-6	2-Methylnaphthalene	64	66	%REC	3	3
SW-846 8270	95-48-7	2-Methylphenol	64	67	%REC	3	3
SW-846 8270	88-74-4	2-Nitroaniline	66	74	%REC	3	3
SW-846 8270	91-94-1	3,3'-Dichlorobenzidine	55	64	%REC	3	3
SW-846 8270	534-52-1	4,6-Dinitro-2-methylphenol	33	62	%REC	3	3
SW-846 8270	106-47-8	4-Chloroaniline	55	59	%REC	3	3
SW-846 8260	108-10-1	4-Methyl-2-pentanone	84	109	%REC	9	9
SW-846 8270	106-44-5	4-Methylphenol	65	68	%REC	3	3
SW-846 8270	100-02-7	4-Nitrophenol	59	68	%REC	3	3
SW-846 8270B	100-02-7	4-Nitrophenol	49	95	%REC	9	9
SW-846 8270	83-32-9	Acenaphthene	65	69	%REC	3	3
SW-846 8270B	83-32-9	Acenaphthene	53	77	%REC	9	9
SW-846 8260	67-64-1	Acetone	0	162.7	%REC	9	9
SW-846 6010	7429-90-5	Aluminum	46	6450	%REC	9	9
SW-846 6010/6010B	7429-90-5	Aluminum	312	2980	%REC	10	10
SW-846 8270	120-12-7	Anthracene	65	76	%REC	3	3

*Closeout Report for IHSS Group 400-7*

Test Method	CAS No.	Analyte	Min. Result	Max. Result	Unit	No. of Samples	No. of Lab Batches
SW-846 6010	7440-36-0	Antimony	37	85	%REC	9	9
SW-846 6010/6010B	7440-36-0	Antimony	26	64	%REC	10	10
SW-846 6010	7440-38-2	Arsenic	88	99	%REC	9	9
SW-846 6010/6010B	7440-38-2	Arsenic	77	97	%REC	10	10
SW-846 6010	7440-39-3	Barium	89	107	%REC	9	9
SW-846 6010/6010B	7440-39-3	Barium	75	106	%REC	10	10
SW-846 8260	71-43-2	Benzene	76.82	102	%REC	14	14
SW-846 8270	56-55-3	Benzo(a)anthracene	61	76	%REC	3	3
SW-846 8270	50-32-8	Benzo(a)pyrene	63	73	%REC	3	3
SW-846 8270	205-99-2	Benzo(b)fluoranthene	59	75	%REC	3	3
SW-846 8270	207-08-9	Benzo(k)fluoranthene	63	82	%REC	3	3
SW-846 8270	65-85-0	Benzoic acid	26	44	%REC	3	3
SW-846 8270	100-51-6	Benzyl alcohol	63	75	%REC	3	3
SW-846 6010	7440-41-7	Beryllium	84	108	%REC	9	9
SW-846 6010/6010B	7440-41-7	Beryllium	76	99	%REC	10	10
SW-846 8270	111-44-4	bis(2-Chloroethyl)ether	59	70	%REC	3	3
SW-846 8270	39638-32-9	bis(2-Chloroisopropyl)ether	60	72	%REC	3	3
SW-846 8270	117-81-7	bis(2-Ethylhexyl)phthalate	66	77	%REC	3	3
SW-846 8260	75-27-4	Bromodichloromethane	70.16	102	%REC	9	9
SW-846 8260	75-25-2	Bromoform	70.625	97	%REC	9	9
SW-846 8260	74-83-9	Bromomethane	67	99	%REC	9	9
SW-846 8270	85-68-7	Butylbenzylphthalate	66	75	%REC	3	3
SW-846 6010	7440-43-9	Cadmium	81	96	%REC	9	9
SW-846 6010/6010B	7440-43-9	Cadmium	80	96	%REC	10	10
SW-846 8260	75-15-0	Carbon disulfide	63.95	120	%REC	9	9
SW-846 8260	56-23-5	Carbon tetrachloride	78.91	105	%REC	9	9
SW-846 8260	108-90-7	Chlorobenzene	69.11	100	%REC	14	14
SW-846 8260	75-00-3	Chloroethane	66	103	%REC	9	9
SW-846 8260	67-66-3	Chloroform	78.36	104	%REC	9	9
SW-846 8260	74-87-3	Chloromethane	47.1	110	%REC	9	9
SW-846 6010	7440-47-3	Chromium	78	126	%REC	9	9
SW-846 6010/6010B	7440-47-3	Chromium	66	108	%REC	10	10
SW-846 8270	218-01-9	Chrysene	66	70	%REC	3	3
SW-846 8260	10061-01-5	cis-1,3-Dichloropropene	69.66	97	%REC	9	9
SW-846 6010	7440-48-4	Cobalt	89	97	%REC	9	9
SW-846 6010/6010B	7440-48-4	Cobalt	74	100	%REC	10	10
SW-846 6010	7440-50-8	Copper	84	111	%REC	9	9
SW-846	7440-50-8	Copper	0	107	%REC	10	10

Closeout Report for IHSS Group 400-7

Test Method	CAS No.	Analyte	Min. Result	Max. Result	Unit	No. of Samples	No. of Lab Batches
6010/6010B							
SW-846 8270	84-74-2	Di-n-butylphthalate	67	78	%REC	3	3
SW-846 8270	117-84-0	Di-n-octylphthalate	63	74	%REC	3	3
SW-846 8270	53-70-3	Dibenz(a,h)anthracene	65	72	%REC	3	3
SW-846 8270	132-64-9	Dibenzofuran	68	75	%REC	3	3
SW-846 8260	124-48-1	Dibromochloromethane	74.96	99	%REC	9	9
SW-846 8270	84-66-2	Diethylphthalate	66	77	%REC	3	3
SW-846 8270	131-11-3	Dimethylphthalate	67	76	%REC	3	3
SW-846 8260	100-41-4	Ethylbenzene	66.89	98	%REC	9	9
SW-846 8270	206-44-0	Fluoranthene	62	70	%REC	3	3
SW-846 8270	86-73-7	Fluorene	65	73	%REC	3	3
SW-846 8270	118-74-1	Hexachlorobenzene	65	76	%REC	3	3
SW-846 8260	87-68-3	Hexachlorobutadiene	48	87	%REC	9	9
SW-846 8270	87-68-3	Hexachlorobutadiene	57	67	%REC	3	3
SW-846 8270	77-47-4	Hexachlorocyclopentadiene	10	56	%REC	3	3
SW-846 8270	67-72-1	Hexachloroethane	48	63	%REC	3	3
SW-846 8270	193-39-5	Indeno(1,2,3-cd)pyrene	57	70	%REC	3	3
SW-846 6010	7439-89-6	Iron	0	3010	%REC	9	9
SW-846 6010/6010B	7439-89-6	Iron	0	3780	%REC	10	10
SW-846 8270	78-59-1	Isophorone	62	67	%REC	3	3
SW-846 6010	7439-92-1	Lead	88	100	%REC	9	9
SW-846 6010/6010B	7439-92-1	Lead	77	109	%REC	10	10
SW-846 6010	7439-93-2	Lithium	80	107	%REC	9	9
SW-846 6010/6010B	7439-93-2	Lithium	86	103	%REC	10	10
SW-846 6010	7439-96-5	Manganese	0	201	%REC	9	9
SW-846 6010/6010B	7439-96-5	Manganese	0	202	%REC	10	10
SW-846 6010	7439-97-6	Mercury	83	101	%REC	6	6
SW-846 6010/6010B	7439-97-6	Mercury	80	107	%REC	9	9
SW-846 8260	75-09-2	Methylene chloride	77	101	%REC	9	9
SW-846 6010	7439-98-7	Molybdenum	86	94	%REC	9	9
SW-846 6010/6010B	7439-98-7	Molybdenum	69	97	%REC	10	10
SW-846 8270	86-30-6	n-Nitrosodiphenylamine	69	84	%REC	3	3
SW-846 8270	621-64-7	n-Nitrosodipropylamine	60	67	%REC	3	3
SW-846 8270B	621-64-7	n-Nitrosodipropylamine	54	77	%REC	9	9
SW-846 8260	91-20-3	Naphthalene	45	94	%REC	9	9
SW-846 8270	91-20-3	Naphthalene	60	65	%REC	3	3
SW-846 6010	7440-02-0	Nickel	86	103	%REC	9	9
SW-846 6010/6010B	7440-02-0	Nickel	75	99	%REC	10	10
SW-846 8270	98-95-3	Nitrobenzene	59	66	%REC	3	3

Test Method	CAS No.	Analyte	Min. Result	Max. Result	Unit	No. of Samples	No. of Lab Batches
SW-846 8270	87-86-5	Pentachlorophenol	55	63	%REC	3	3
SW-846 8270B	87-86-5	Pentachlorophenol	15	57	%REC	9	9
SW-846 8270	108-95-2	Phenol	63	69	%REC	3	3
SW-846 8270B	108-95-2	Phenol	58	80	%REC	9	9
SW-846 8270	129-00-0	Pyrene	61	76	%REC	3	3
SW-846 8270B	129-00-0	Pyrene	49	84	%REC	9	9
SW-846 6010	7782-49-2	Selenium	88	98	%REC	9	9
SW-846 6010/6010B	7782-49-2	Selenium	80	92	%REC	10	10
SW-846 6010	7440-22-4	Silver	89	103	%REC	9	9
SW-846 6010/6010B	7440-22-4	Silver	81	103	%REC	10	10
SW-846 6010	7440-24-6	Strontium	92	108	%REC	9	9
SW-846 6010/6010B	7440-24-6	Strontium	84	102	%REC	10	10
SW-846 8260	100-42-5	Styrene	63.16	105	%REC	9	9
SW-846 8260	127-18-4	Tetrachloroethene	73.41	95	%REC	9	9
SW-846 6010	7440-31-5	Tin	81	93	%REC	9	9
SW-846 6010/6010B	7440-31-5	Tin	67	96	%REC	10	10
SW-846 8260	108-88-3	Toluene	68	99	%REC	14	14
SW-846 8260	10061-02-6	trans-1,3-Dichloropropene	71.25	106	%REC	9	9
SW-846 8260	79-01-6	Trichloroethene	71.34	108	%REC	14	14
SW-846 6010	11-09-6	Uranium, Total	91	98	%REC	9	9
SW-846 6010/6010B	11-09-6	Uranium, Total	75	105	%REC	10	10
SW-846 6010	7440-62-2	Vanadium	77	134	%REC	9	9
SW-846 6010/6010B	7440-62-2	Vanadium	60	112	%REC	10	10
SW-846 8260	75-01-4	Vinyl chloride	59.12	101	%REC	9	9
SW-846 8260	1330-20-7	Xylene	72.49	99	%REC	9	9
SW-846 6010	7440-66-6	Zinc	66	211	%REC	9	9
SW-846 6010/6010B	7440-66-6	Zinc	56	101	%REC	10	10

### 13.2.2 Precision

#### Sample Matrix Spike Duplicate Evaluation

Laboratory precision is measured through use of MSDs, as summarized in Table 18. Analytes with the highest relative percent differences (RPDs) were reviewed by comparing the highest sample result to the WRW AL. For analytes with RPDs greater than 35 percent, if the highest sample concentrations were sufficiently below the AL, no further action is needed. For this project, the review indicated decisions were not impacted. High PAH concentrations at the surface were remediated (Section 3.0), and high concentrations in subsurface soil are not an issue based on the SSRS (Section 6.0).

**Table 18**  
**Sample MSD Evaluation Summary**

Test Method	CAS No.	Analyte	Max RPD
SW-846 8260	71-55-6	1,1,1-Trichloroethane	25.73
SW-846 8260	79-34-5	1,1,2,2-Tetrachloroethane	20.99
SW-846 8260	79-00-5	1,1,2-Trichloroethane	20.87
SW-846 8260	75-34-3	1,1-Dichloroethane	22.12
SW-846 8260	75-35-4	1,1-Dichloroethene	21.98
SW-846 8260	120-82-1	1,2,4-Trichlorobenzene	66.44
SW-846 8270B	120-82-1	1,2,4-Trichlorobenzene	50.00
SW-846 8270	120-82-1	1,2,4-Trichlorobenzene	8.13
SW-846 8260	95-50-1	1,2-Dichlorobenzene	40.72
SW-846 8260	107-06-2	1,2-Dichloroethane	19.97
SW-846 8260	78-87-5	1,2-Dichloropropane	24.58
SW-846 8270B	106-46-7	1,4-Dichlorobenzene	29.17
SW-846 8260	106-46-7	1,4-Dichlorobenzene	41.82
SW-846 8270	95-95-4	2,4,5-Trichlorophenol	5.88
SW-846 8270	88-06-2	2,4,6-Trichlorophenol	2.86
SW-846 8270	120-83-2	2,4-Dichlorophenol	4.72
SW-846 8270	105-67-9	2,4-Dimethylphenol	5.88
SW-846 8270	51-28-5	2,4-Dinitrophenol	9.23
SW-846 8270	121-14-2	2,4-Dinitrotoluene	6.90
SW-846 8270B	121-14-2	2,4-Dinitrotoluene	33.60
SW-846 8270	606-20-2	2,6-Dinitrotoluene	5.63
SW-846 8260	78-93-3	2-Butanone	18.96
SW-846 8270	91-58-7	2-Chloronaphthalene	4.44
SW-846 8270	95-57-8	2-Chlorophenol	7.75
SW-846 8270B	95-57-8	2-Chlorophenol	28.57
SW-846 8270	91-57-6	2-Methylnaphthalene	4.58
SW-846 8270	95-48-7	2-Methylphenol	6.06
SW-846 8270	88-74-4	2-Nitroaniline	5.88
SW-846 8270	91-94-1	3,3'-Dichlorobenzidine	10.34
SW-846 8270	534-52-1	4,6-Dinitro-2-methylphenol	8.26
SW-846 8270	106-47-8	4-Chloroaniline	7.27
SW-846 8260	108-10-1	4-Methyl-2-pentanone	19.05
SW-846 8270	106-44-5	4-Methylphenol	5.97
SW-846 8270	100-02-7	4-Nitrophenol	10.22
SW-846 8270B	100-02-7	4-Nitrophenol	33.33
SW-846 8270B	83-32-9	Acenaphthene	30.51
SW-846 8270	83-32-9	Acenaphthene	3.03
SW-846 8260	67-64-1	Acetone	27.22
SW-846 6010	7429-90-5	Aluminum	182.41
SW-846 6010/6010B	7429-90-5	Aluminum	127.56
SW-846 8270	120-12-7	Anthracene	5.97
SW-846 6010	7440-36-0	Antimony	20.51

Test Method	CAS No.	Analyte	Max RPD
SW-846 6010/6010B	7440-36-0	Antimony	21.28
SW-846 6010	7440-38-2	Arsenic	4.44
SW-846 6010/6010B	7440-38-2	Arsenic	2.56
SW-846 6010	7440-39-3	Barium	8.78
SW-846 6010/6010B	7440-39-3	Barium	12.00
SW-846 8260	71-43-2	Benzene	23.20
SW-846 8270	56-55-3	Benzo(a)anthracene	10.85
SW-846 8270	50-32-8	Benzo(a)pyrene	9.09
SW-846 8270	205-99-2	Benzo(b)fluoranthene	18.46
SW-846 8270	207-08-9	Benzo(k)fluoranthene	17.22
SW-846 8270	65-85-0	Benzoic acid	7.41
SW-846 8270	100-51-6	Benzyl alcohol	6.45
SW-846 6010/6010B	7440-41-7	Beryllium	4.44
SW-846 6010	7440-41-7	Beryllium	22.22
SW-846 8270	111-44-4	bis(2-Chloroethyl)ether	7.41
SW-846 8270	39638-32-9	bis(2-Chloroisopropyl)ether	6.25
SW-846 8270	117-81-7	bis(2-Ethylhexyl)phthalate	7.30
SW-846 8260	75-27-4	Bromodichloromethane	22.86
SW-846 8260	75-25-2	Bromoform	22.46
SW-846 8260	74-83-9	Bromomethane	22.83
SW-846 8270	85-68-7	Butylbenzylphthalate	7.30
SW-846 6010	7440-43-9	Cadmium	7.23
SW-846 6010/6010B	7440-43-9	Cadmium	2.50
SW-846 8260	75-15-0	Carbon disulfide	22.94
SW-846 8260	56-23-5	Carbon tetrachloride	27.18
SW-846 8260	108-90-7	Chlorobenzene	29.24
SW-846 8260	75-00-3	Chloroethane	21.94
SW-846 8260	67-66-3	Chloroform	20.15
SW-846 8260	74-87-3	Chloromethane	19.50
SW-846 6010	7440-47-3	Chromium	14.29
SW-846 6010/6010B	7440-47-3	Chromium	20.87
SW-846 8270	218-01-9	Chrysene	10.07
SW-846 8260	10061-01-5	cis-1,3-Dichloropropene	23.37
SW-846 6010/6010B	7440-48-4	Cobalt	3.92
SW-846 6010	7440-48-4	Cobalt	5.29
SW-846 6010	7440-50-8	Copper	16.39
SW-846 6010/6010B	7440-50-8	Copper	17.24
SW-846 8270	84-74-2	Di-n-butylphthalate	5.80
SW-846 8270	117-84-0	Di-n-octylphthalate	7.63
SW-846 8270	53-70-3	Dibenz(a,h)anthracene	7.41
SW-846 8270	132-64-9	Dibenzofuran	5.71
SW-846 8260	124-48-1	Dibromochloromethane	23.23
SW-846 8270	84-66-2	Diethylphthalate	6.71
SW-846 8270	131-11-3	Dimethylphthalate	4.38

Test Method	CAS No.	Analyte	Max RPD
SW-846 8260	100-41-4	Ethylbenzene	31.47
SW-846 8270	206-44-0	Fluoranthene	18.98
SW-846 8270	86-73-7	Fluorene	4.51
SW-846 8270	118-74-1	Hexachlorobenzene	6.80
SW-846 8270	87-68-3	Hexachlorobutadiene	8.40
SW-846 8260	87-68-3	Hexachlorobutadiene	107.62
SW-846 8270	77-47-4	Hexachlorocyclopentadiene	26.09
SW-846 8270	67-72-1	Hexachloroethane	9.90
SW-846 8270	193-39-5	Indeno(1,2,3-cd)pyrene	11.57
SW-846 6010	7439-89-6	Iron	137.68
SW-846 6010/6010B	7439-89-6	Iron	104.62
SW-846 8270	78-59-1	Isophorone	4.72
SW-846 6010	7439-92-1	Lead	8.70
SW-846 6010/6010B	7439-92-1	Lead	84.57
SW-846 6010	7439-93-2	Lithium	23.20
SW-846 6010/6010B	7439-93-2	Lithium	8.08
SW-846 6010	7439-96-5	Manganese	29.71
SW-846 6010/6010B	7439-96-5	Manganese	64.94
SW-846 6010/6010B	7439-97-6	Mercury	15.03
SW-846 6010	7439-97-6	Mercury	9.62
SW-846 8260	75-09-2	Methylene chloride	19.47
SW-846 6010	7439-98-7	Molybdenum	4.44
SW-846 6010/6010B	7439-98-7	Molybdenum	3.68
SW-846 8270	86-30-6	n-Nitrosodiphenylamine	6.99
SW-846 8270	621-64-7	n-Nitrosodipropylamine	6.45
SW-846 8270B	621-64-7	n-Nitrosodipropylamine	24.76
SW-846 8260	91-20-3	Naphthalene	37.16
SW-846 8270	91-20-3	Naphthalene	6.45
SW-846 6010/6010B	7440-02-0	Nickel	10.64
SW-846 6010	7440-02-0	Nickel	5.03
SW-846 8270	98-95-3	Nitrobenzene	6.56
SW-846 8270	87-86-5	Pentachlorophenol	8.70
SW-846 8270B	87-86-5	Pentachlorophenol	46.15
SW-846 8270B	108-95-2	Phenol	21.43
SW-846 8270	108-95-2	Phenol	7.63
SW-846 8270	129-00-0	Pyrene	10.85
SW-846 8270B	129-00-0	Pyrene	104.76
SW-846 6010/6010B	7782-49-2	Selenium	7.23
SW-846 6010	7782-49-2	Selenium	4.00
SW-846 6010/6010B	7440-22-4	Silver	4.26
SW-846 6010	7440-22-4	Silver	4.12
SW-846 6010	7440-24-6	Strontium	8.00
SW-846 6010/6010B	7440-24-6	Strontium	12.50
SW-846 8260	100-42-5	Styrene	30.02

Test Method	CAS No.	Analyte	Max RPD
SW-846 8260	127-18-4	Tetrachloroethene	34.72
SW-846 6010	7440-31-5	Tin	4.40
SW-846 6010/6010B	7440-31-5	Tin	4.38
SW-846 8260	108-88-3	Toluene	26.40
SW-846 8260	10061-02-6	trans-1,3-Dichloropropene	23.17
SW-846 8260	79-01-6	Trichloroethene	27.16
SW-846 6010	11-09-6	Uranium, Total	3.28
SW-846 6010/6010B	11-09-6	Uranium, Total	5.71
SW-846 6010/6010B	7440-62-2	Vanadium	15.38
SW-846 6010	7440-62-2	Vanadium	16.49
SW-846 8260	75-01-4	Vinyl chloride	21.07
SW-846 8260	1330-20-7	Xylene	32.94
SW-846 6010	7440-66-6	Zinc	51.94
SW-846 6010/6010B	7440-66-6	Zinc	25.53

### Field Duplicate Evaluation

Field duplicate results reflect sampling precision, or overall repeatability of the sampling process. The frequency of field duplicate collection should exceed 1 field duplicate per 20 real samples, or 5 percent. Table 19 indicates that field duplicate frequencies were adequate. The combined duplicate frequency for metal analyses (Method 6010 plus 6010/6010B) is 5.7 percent, and the combined duplicate frequency for SVOC analyses (Method 8270 plus 8270B) is 5.2 percent. No duplicate metal analyses were conducted using Method 6200; however, duplicate metal analyses were conducted using Method 6010. No duplicate PCB analyses (Method 8082) were conducted; however, only one sample was collected for PCB analysis. An insufficient number of gamma spectroscopy duplicates were analyzed, however, radionuclide activities in the IHSS Group were not elevated and did not impact project decisions.

**Table 19**  
**Field Duplicate Sample Frequency Summary**

Test Method	No. of Real Samples	No. of Duplicate Samples	% Duplicate Samples
Alpha Spectroscopy	16	1	6.25%
Gamma Spectroscopy	140	6	4.29%
SW-846 6010	27	1	3.70%
SW-846 6010/6010B	95	6	6.32%
SW-846 6200	7	0	0.00%
SW-846 8082	1	0	0.00%
SW-846 8260	84	7	8.33%
SW-846 8270	13	0	0.00%
SW-846 8270B	102	6	5.88%
SW8440 PREP SW3560(9)	163	15	9.20%

The RPD values indicate how much variation exists in the field duplicate analyses. EPA data validation guidelines state that "there are no required review criteria for field duplicate analyses comparability" (EPA 1994b). For the DQA, the highest RPD values (Table 20) were reviewed. For this project, project decisions were not impacted because the decision whether to remediate is based on not only an AL comparison but also the results of the SSRS.

**Table 20**  
**RPD Evaluation Summary**

Lab Code	Test Method	Analyte	Max RPD
ESTLDEN	SW-846 8260	1,1,1-Trichloroethane	0.00
STLDEN	SW-846 8260	1,1,1-Trichloroethane	1.90
STLDEN	SW-846 8260	1,1-Dichloroethane	1.90
ESTLDEN	SW-846 8260	1,1-Dichloroethane	0.00
ESTLDEN	SW-846 8260	1,2,4-Trichlorobenzene	0.00
STLDEN	SW-846 8260	1,2,4-Trichlorobenzene	1.90
STLDEN	SW-846 8270B	1,2,4-Trichlorobenzene	5.41
STLDEN	SW-846 8270B	1,2-Dichlorobenzene	5.41
STLDEN	SW-846 8260	1,2-Dichloroethane	1.77
ESTLDEN	SW-846 8260	1,2-Dichloroethane	0.00
STLDEN	SW-846 8270B	1,4-Dichlorobenzene	5.41
STLDEN	SW-846 8270B	2,4,6-Trichlorophenol	5.41
STLDEN	SW-846 8270B	2-Chloronaphthalene	5.41
STLDEN	SW-846 8270B	2-Methylnaphthalene	5.41
STLDEN	SW-846 8270B	2-Nitroaniline	0.00
STLDEN	SW-846 8270B	3,3'-Dichlorobenzidine	6.90
STLDEN	SW-846 8270B	4-Chloroaniline	5.41
STLDEN	SW-846 8260	4-Methyl-2-pentanone	4.44
ESTLDEN	SW-846 8260	4-Methyl-2-pentanone	0.00
STLDEN	SW-846 8270B	4-Nitrophenol	0.00
STLDEN	SW-846 8270B	Acenaphthene	2.82
STLDEN	SW-846 6010/6010B	Aluminum	28.42
ESTLDEN	SW-846 6010	Aluminum	9.09
ESTLDEN	SW-846 6010	Arsenic	13.33
STLDEN	SW-846 6010/6010B	Arsenic	51.69
STLDEN	SW-846 6010/6010B	Barium	27.40
ESTLDEN	SW-846 6010	Barium	62.30
ESTLDEN	SW-846 8260	Benzene	0.00
STLDEN	SW-846 8260	Benzene	1.90
STLDEN	SW-846 8270B	Benzo(a)anthracene	2.82
STLDEN	SW-846 6010/6010B	Beryllium	37.04
ESTLDEN	SW-846 6010	Beryllium	13.19
STLDEN	SW-846 8270B	bis(2-Chloroethyl)ether	5.41
STLDEN	SW-846 8260	Bromodichloromethane	1.90
ESTLDEN	SW-846 8260	Bromodichloromethane	0.00
ESTLDEN	SW-846 8260	Bromoform	0.00

Lab Code	Test Method	Analyte	Max RPD
STLDEN	SW-846 8260	Bromoform	1.90
STLDEN	SW-846 8270B	Butylbenzylphthalate	5.41
STLDEN	SW-846 6010/6010B	Cadmium	19.72
STLDEN	SW-846 8260	Carbon disulfide	1.90
ESTLDEN	SW-846 8260	Carbon disulfide	0.00
ESTLDEN	SW-846 8260	Chlorobenzene	0.00
STLDEN	SW-846 8260	Chlorobenzene	1.90
STLDEN	SW-846 8260	Chloroform	1.90
ESTLDEN	SW-846 8260	Chloroform	0.00
ESTLDEN	SW-846 6010	Chromium	0.00
STLDEN	SW-846 6010/6010B	Chromium	24.66
STLDEN	SW-846 8270B	Chrysene	2.82
STLDEN	SW-846 8260	cis-1,3-Dichloropropene	1.90
ESTLDEN	SW-846 8260	cis-1,3-Dichloropropene	0.00
ESTLDEN	SW-846 6010	Cobalt	49.32
STLDEN	SW-846 6010/6010B	Cobalt	41.58
STLDEN	SW-846 6010/6010B	Copper	47.24
ESTLDEN	SW-846 6010	Copper	10.53
STLDEN	SW-846 8270B	Di-n-octylphthalate	5.41
STLDEN	SW-846 8270B	Dibenz(a,h)anthracene	5.41
STLDEN	SW-846 8260	Dibromochloromethane	1.90
ESTLDEN	SW-846 8260	Dibromochloromethane	0.00
STLDEN	SW-846 8270B	Diethylphthalate	4.03
STLDEN	SW-846 8270B	Hexachlorocyclopentadiene	4.03
STLDEN	SW-846 8270B	Hexachloroethane	5.41
STLDEN	SW-846 8270B	Indeno(1,2,3-cd)pyrene	2.82
STLDEN	SW-846 6010/6010B	Iron	35.86
ESTLDEN	SW-846 6010	Iron	5.13
ESTLDEN	SW-846 6010	Lead	112.06
STLDEN	SW-846 6010/6010B	Lead	30.77
STLDEN	SW-846 6010/6010B	Lithium	31.85
ESTLDEN	SW-846 6010	Lithium	5.13
ESTLDEN	SW-846 6010	Manganese	109.93
STLDEN	SW-846 6010/6010B	Manganese	38.76
STLDEN	SW-846 6010/6010B	Mercury	106.38
STLDEN	SW-846 8260	Methylene chloride	1.90
ESTLDEN	SW-846 8260	Methylene chloride	0.00
ESTLDEN	SW-846 8260	Naphthalene	0.00
STLDEN	SW-846 8260	Naphthalene	1.90
STLDEN	SW-846 6010/6010B	Nickel	34.10
ESTLDEN	SW-846 6010	Nickel	12.50
STLDEN	SW-846 8270B	Pyrene	28.57
STLDEN	SW-846 6010/6010B	Strontium	44.64
ESTLDEN	SW-846 6010	Strontium	6.25

Lab Code	Test Method	Analyte	Max RPD
ESTLDEN	SW-846 8260	Styrene	0.00
STLDEN	SW-846 8260	Styrene	1.90
STLDEN	SW-846 8260	Tetrachloroethene	1.77
STLDEN	SW-846 6010/6010B	Tin	7.14
STLDEN	SW-846 8260	Toluene	1.90
ESTLDEN	SW-846 8260	Toluene	0.00
ESTLDEN	SW-846 8260	trans-1,3-Dichloropropene	0.00
STLDEN	SW-846 8260	trans-1,3-Dichloropropene	1.77
STLDEN	SW-846 8260	Trichloroethene	1.90
ESTLDEN	SW-846 8260	Trichloroethene	0.00
GEL	Alpha Spectroscopy	Uranium-234	16.36
GEL	Alpha Spectroscopy	Uranium-238	4.05
ESTLDEN	SW-846 6010	Vanadium	16.09
STLDEN	SW-846 6010/6010B	Vanadium	24.30
STLDEN	SW-846 6010/6010B	Zinc	25.68
ESTLDEN	SW-846 6010	Zinc	6.32

### 13.2.3 Completeness

Based on original project DQOs, a minimum of 25 percent of ER Program analytical (and radiological) results must be formally verified and validated. Of that percentage, no more than 10 percent of the results may be rejected, which ensures that analytical laboratory practices are consistent with quality requirements. Table 21 lists the number and percentage of validated records (codes without "1"), the number and percentage of verified records (codes with "1"), and the percentage of rejected records for each analyte group for this project. Seven records out of 1,172 validated records were rejected. For this project, the percentages of analyses validated were below Program requirements; however, the ER Program V&V goal of 25 percent is being met.

### 13.2.4 Sensitivity

RLs, in units of micrograms per kilogram ( $\mu\text{g/kg}$ ) for organics, mg/kg for metals and TPH, and picocuries per gram (pCi/g) for radionuclides, were compared with RFCA WRW ALs and the TPH standard. Adequate sensitivities of analytical methods were attained for all COCs that affected remediation decisions. "Adequate" sensitivity is defined as an RL less than an analyte's associated AL, typically less than one-half the AL.

### 13.3 Summary of Data Quality

RPDs greater than 35 percent indicate the sampling precision limits of some analytes have been exceeded. Also, the validation percentages for the project are below 25 percent; however, the ER Program V&V goal of 25 percent is being met. Data collected and used for IHSS Group 400-7 are adequate for decision making.

#### **14.0 CONCLUSIONS**

Results of the accelerated action justify NFAA for IHSS Group 400-7. Justification is based on the following:

- NFAA is appropriate based on surface soil data. All residual surface soil concentrations are less than WRW ALs.
- NFAA is appropriate based on the SSRS. Subsurface soil in the area is not subject to significant erosion, and all residual subsurface soil concentrations are less than WRW ALs.
- NFAA is indicated by the stewardship evaluation.

**Table 21**  
**Validation and Verification Summary**

Validation Qualifier Code	Total No. of Records	No. of Alpha Spectroscopy Records	No. of Gamma Spectroscopy Records	No. of SW-846 6010 Records	No. of SW-846 6010/6010B Records	No. of SW-846 6200 Records	No. of SW-846 8082 Records	No. of SW-846 8260 Records	No. of SW-846 8270 Records	No. of SW-846 8270B Records
No V&V	11	0	3	0	0	0	0	1	7	0
I	3	0	0	0	0	0	0	1	0	2
J	86	0	0	86	0	0	0	0	0	0
J1	515	2	0	19	491	1	0	2	0	0
JB	6	0	0	0	0	0	0	6	0	0
JB1	14	0	0	0	0	0	0	14	0	0
R1	7	0	0	0	7	0	0	0	0	0
UJ	41	0	0	26	0	0	0	15	0	0
UJ1	338	0	0	19	202	0	0	37	0	80
V	1039	25	57	302	0	0	0	447	208	0
V1	11200	53	378	169	1600	125	7	2647	468	5753
Total	13260	80	438	621	2300	126	7	3170	683	5835
Validated	1172	25	57	414	0	0	0	468	208	0
% Validated	8.84%	31.25%	13.01%	66.67%	0.00%	0.00%	0.00%	14.76%	30.45%	0.00%
Verified	12077	55	378	207	2300	126	7	2701	468	5835
% Verified	91.08%	68.75%	86.30%	33.33%	100.00%	100.00%	100.00%	85.21%	68.52%	100.00%
Rejected	7	0	0	0	7	0	0	0	0	0
% Rejected	0.05%	0.00%	0.00%	0.00%	0.30%	0.00%	0.00%	0.00%	0.00%	0.00%
Validated	J, V, JB, UJ									
Verified	I, J1, V1, JB1, UJ1									

## **15.0 REFERENCES**

- CDPHE, 2002, Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation FY02 Notification #02-06 Approval Letter, May 21.
- DOE, 1992-2003, Historical Release Reports for the Rocky Flats Plant, Golden, Colorado.
- DOE, 1998, Historic American Engineering Record, Rocky Flats Environmental Technology Site, Golden, Colorado.
- DOE, 1999a, RFCA Standard Operating Protocol for Recycling Concrete, Rocky Flats Environmental Technology Site, Golden, Colorado.
- DOE, 1999b, Order 414.1A, Quality Assurance.
- DOE, 2000, Rocky Flats Environmental Technology Site Industrial Area Data Summary Report, Golden, Colorado, September.
- DOE, 2001, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, Colorado, June.
- DOE, 2002a, Industrial Area Sampling and Analysis Plan Addendum #IA-02-05, Rocky Flats Environmental Technology Site, Golden, Colorado, April.
- DOE, 2002b, Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation, Rocky Flats Environmental Technology Site, Golden, Colorado, January.
- DOE, 2002c, Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation Notification #02-06, Rocky Flats Environmental Technology Site, Golden, Colorado, May.
- DOE, 2002d, Closure Description Document for Partial Closure of RCRA Unit 374.3 – the 400 Area Process Waste Transfer System, Rocky Flats Environmental Technology Site, Golden, Colorado, May.
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- DOE, 2003b, Integrated Monitoring Plan, FY 2004, Background Document, Rocky Flats Environmental Technology Site, Golden, Colorado, March.
- DOE, 2004, Technical Memorandum – Closure Strategy for the Rocky Flats Environmental Technology Site Sanitary Sewer System, Rocky Flats Environmental Technology Site, Golden, Colorado, August.
- DOE, CDPHE and EPA, 2003, Modifications to the Rocky Flats Cleanup Agreement Attachment, U.S. Department of Energy, Colorado Department of Public Health and Environment, and U.S. Environmental Protection Agency, Rocky Flats Environmental Technology Site, Golden, Colorado, June.
- EPA, 1994a, Guidance for the Data Quality Objective Process, QA/G-4.
- EPA, 1994b, USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, 540/R-94/012.

EPA, 1994c, USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, 540/R-94/013.

EPA, 1998, Guidance for the Data Quality Assessment Process, Practical Methods for Data Analysis, QA/G-9.

K-H, 2002a, General Guidelines for Data Verification and Validation, DA-GR01-v2, Rocky Flats Environmental Technology Site, Golden, Colorado, October.

K-H, 2002b, V&V Guidelines for Isotopic Determinations by Alpha Spectrometry, DA-RC01-v2, Rocky Flats Environmental Technology Site, Golden, Colorado, October.

K-H, 2002c, V&V Guidelines for Volatile Organics, DA-SS01-v3, Rocky Flats Environmental Technology Site, Golden, Colorado, October.

K-H, 2002d, V&V Guidelines for Semivolatile Organics, DA-SS02-v3, Rocky Flats Environmental Technology Site, Golden, Colorado, October.

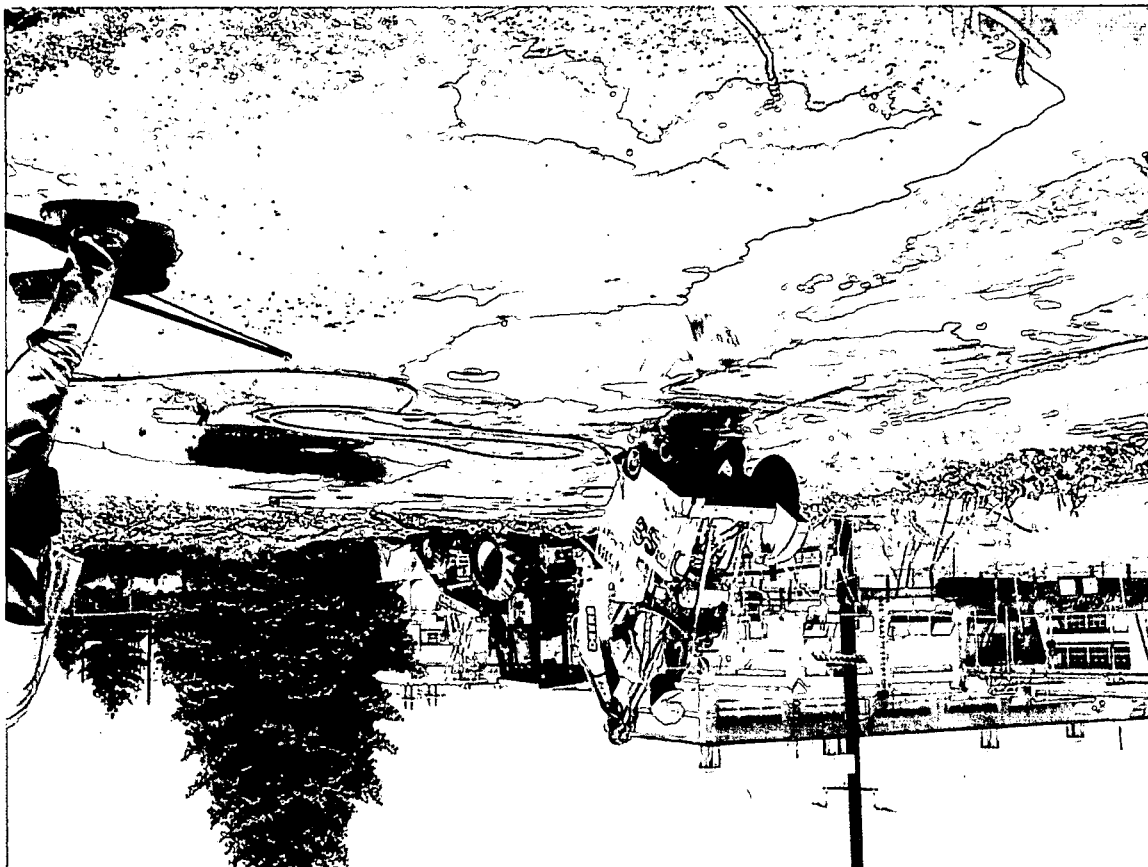
K-H, 2002e, V&V Guidelines for Metals, DA-SS05-v3, Rocky Flats Environmental Technology Site, Golden, Colorado, October.

Lockheed-Martin, 1997, Evaluation of Radiochemical Data Usability, ES/ER/MS-5.

**Appendix A  
Project Photographs**

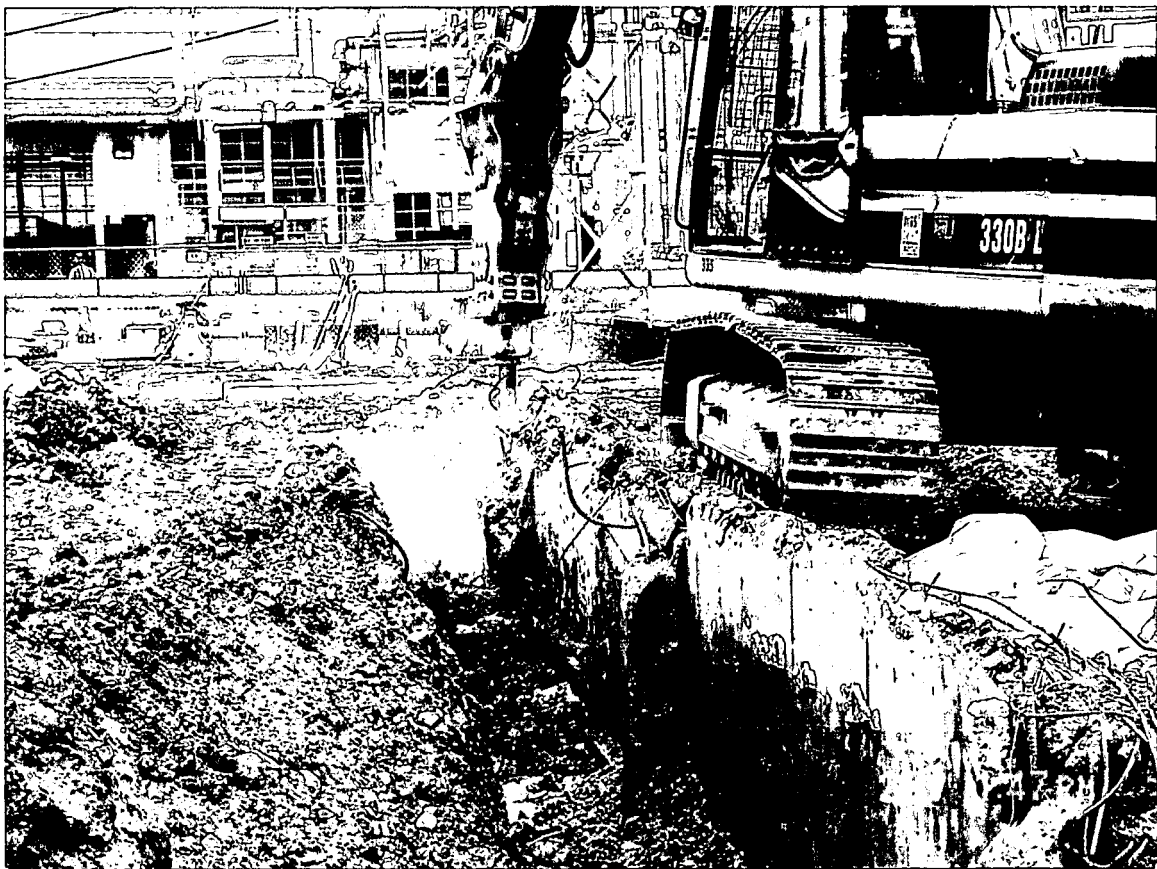
Best Available Copy

Sawcutting of the Building 442 Sump



Building 442 Slab Looking East Prior to Removal





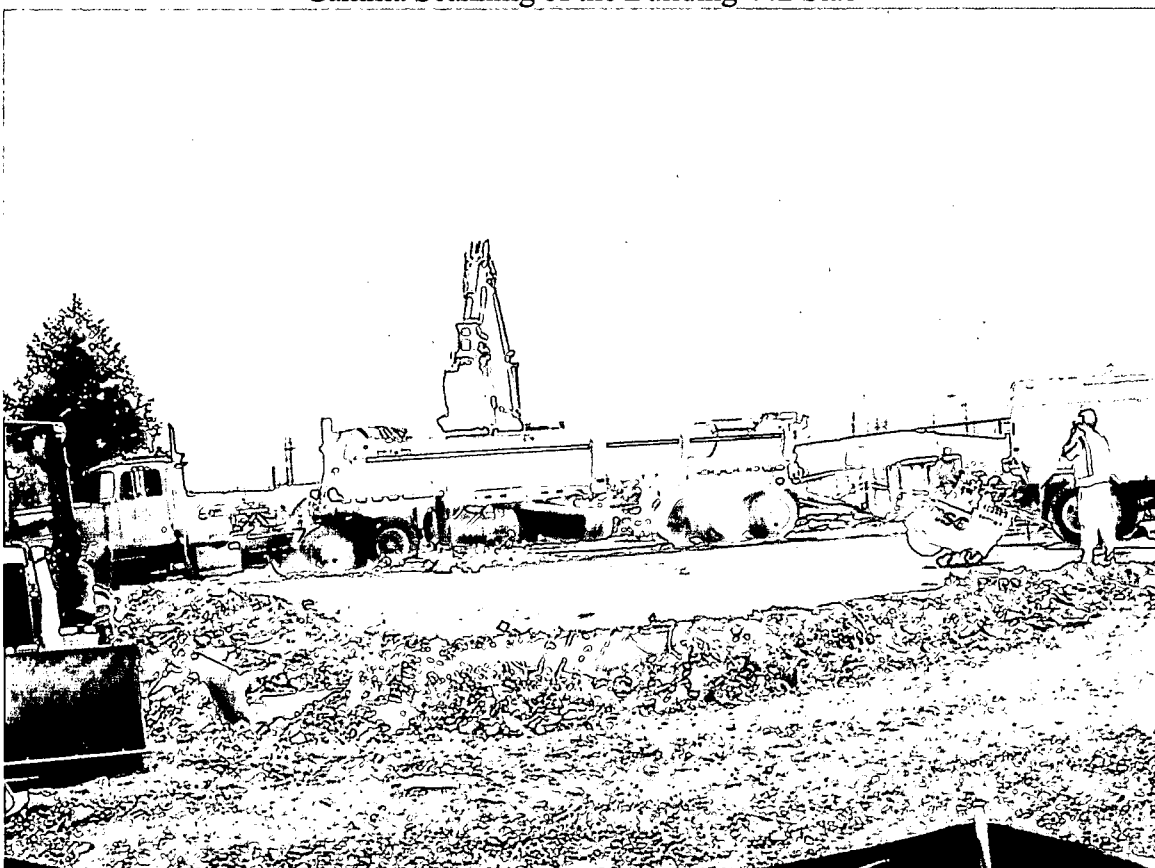
Hammering the Building 442 North Footer Wall



Building 442 West Footer Wall Prior to Removal



Gamma Scanning of the Building 442 Slab



Removal of the Building 442 Slab



Exposed Building 442 Waste Lines



Pouring Epoxy into a Building 442 Waste Line to Fix Any Radiological Contamination



Site of the Former Building 442 and Building 452 Area Looking West



Fuel Oil Tank #4 – Foamed and Releasing Water

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Fuel Oil Tank #2 Initially Exposed



Fuel Oil Tank #3 Initially Exposed



Fuel Oil Tank #2 Cut Open for Oil Removal



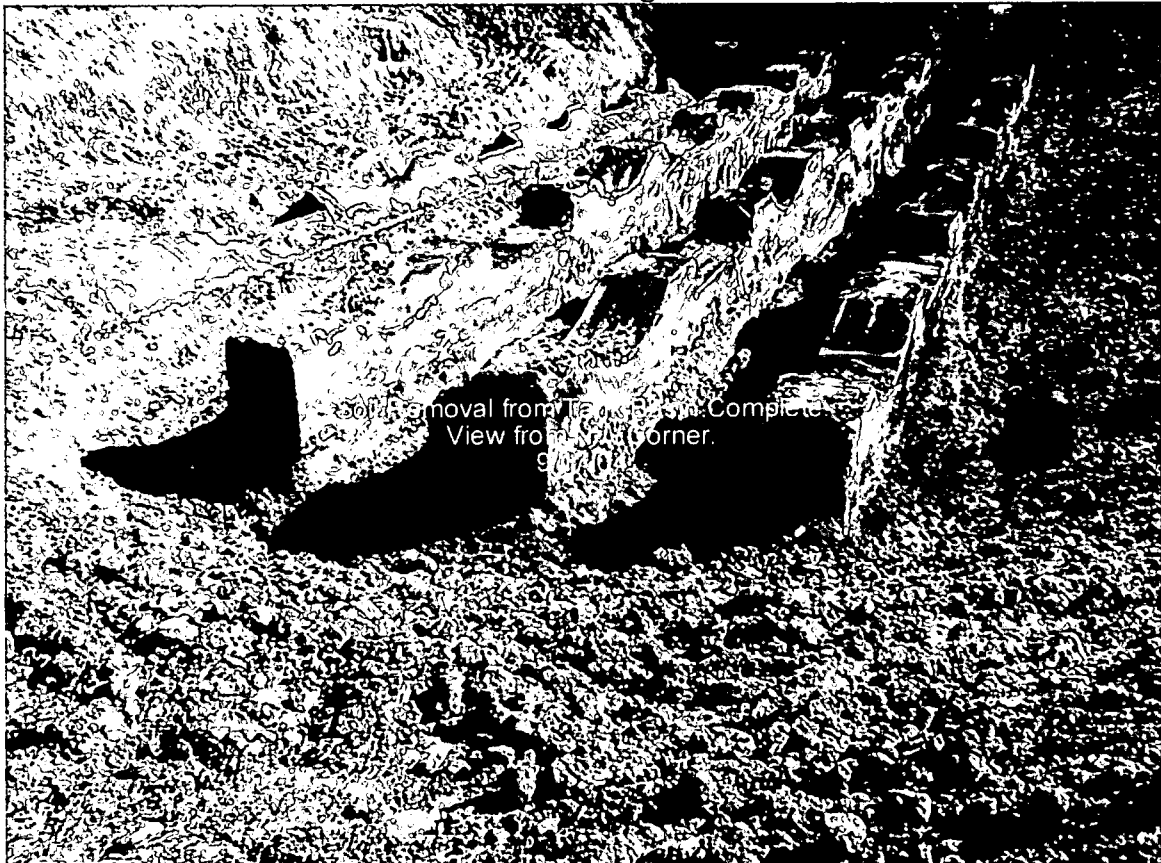
Remove Oil From Tank #1

9/24/04

Track Excavator Removing Oil from Fuel Oil Tank #1



Fuel Oil Tanks #1 and #2 Awaiting Further Size Reduction



Fuel Oil Tank Supports After Removal of Oil-Contaminated Soil



Valve Vault Prior to Demolition



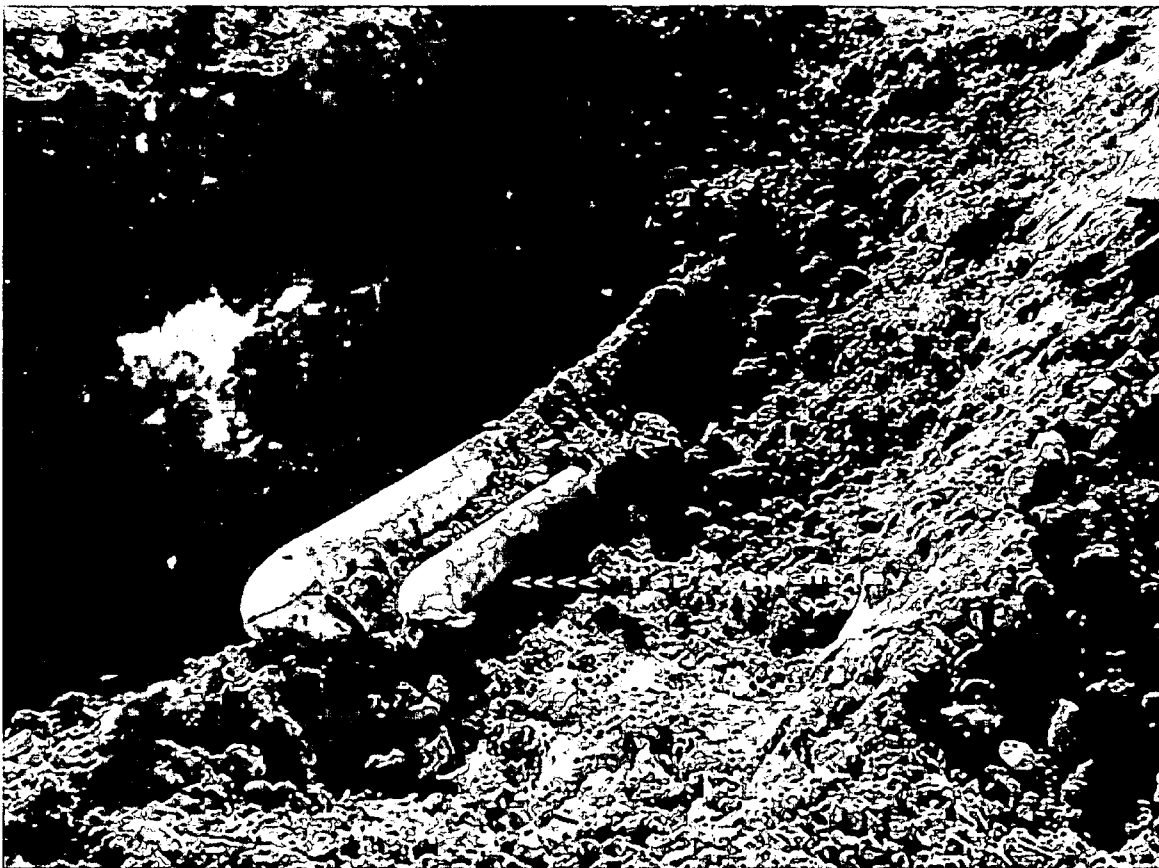
Valve Vault Excavated to 4 ft Below Grade



Site of Former Valve Vault 16 Showing Grouted Waste Lines



Steam Line Near the Eastern Project Boundary



Steam and Condensate Lines at Eastern Project Boundary Showing No Oil-  
Contamination Soil and Tar/Asphalt Layer on Condensate Line

## **Appendix B Correspondence**

**ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE  
ER REGULATORY CONTACT RECORD**

**Date/Time:** July 30, 2002 / 4:30 pm

**Site Contact(s):** Annette Primrose  
**Phone:** 4385

**Regulatory Contact:** David Kruchek  
**Phone:** 303-692-3328

**Agency:** CDPHE

**Purpose of Contact:** Sample location changes for IHSS Group 400-7, B452 area

**Discussion** As described in the IASAP Addendum #IA-02-05 for IHSS Group 400-7, 4 surface and subsurface soil samples were to be collected in the 0-1/2 ft and 1/2 foot to 2 1/2 ft intervals in the area immediately adjacent and under B452. While these samples were primarily designed to determine if contamination was present from an historic sulfuric acid spill, a full suite of analyses were to be collected. However, during Decommissioning activities on July 30<sup>th</sup>, some of this soil was removed.

To meet the intent of the IASAP Addendum, on the afternoon of July 30<sup>th</sup> the following steps were taken:

- 4 soil samples were collected at the newly exposed surface. These samples are representative of the deeper interval at the locations identified in the IASAP Addendum.
- Surface and subsurface samples were collected as planned from a location previously beneath the B452 slab that was now exposed and relatively undisturbed.
- Grab samples were collected from the two piles of previously removed dirt and will be analyzed for the full suite of samples.
- All samples will be analyzed on a rush turnaround basis.

The RISS D&D Project covered the soil pile at the B850 area. The soil pile at the B452 area was not covered as it is located in the area where it was derived and it is expected to be of approximately the same concentrations as the surrounding soils.

It is expected that these soils will not exceed action levels as this area was anticipated not to require a remedial action. If these soil results exceed action levels, additional actions may be required and will be communicated when information is received.

**Contact Record Prepared by:** Annette Primrose

**Required Distribution:**

S. Bell, RFFO  
L. Brooks, K-H ESS  
L. Butler, K-H RISS  
C. Deck, K-H Legal  
R. DiSalvo, RFFO  
S. Gunderson, CDPHE  
J. Legare, RFFO

D. Mayo, K-H RISS  
J. Mead, K-H ESS  
S. Nesta, K-H RISS  
K. North, K-H ESS  
T. Rehder, USEPA  
D. Shelton, K-H  
C. Spreng, CDPHE  
E. Pottorff, CDPHE

**Additional Distribution**

(choose names as applicable):

M. Broussard, K-H RISS  
M. Burmeister, KH Team  
K. Kehler, K-H RISS  
G. Kleeman, USEPA  
D. Kruchek, CDPHE  
A. Primrose, K-H RISS  
S. Serreze, KH Team  
D. Strand, KH Team  
S. Tower, DOE

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## ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE ER REGULATORY CONTACT RECORD

Date/Time: 6/25/02 8:15am and 4:15pm at B442 Site

Site Contact(s): Mark Burmeister

Phone: 303-966-5891

Regulatory Contact: David Kruchek

Phone: 303-692-3328

Agency: CDPHE

Purpose of Contact: B442 Slab Remediation Project

### Discussion

8:15 am telcon; We discussed excavation of the sanitary sewer line running from B442 "Laundry" (L) slab to the west to the manhole on 5<sup>th</sup> Street. Excavation of the drain line occurred on Monday, 6/24/02 at a point approx. 10' east of the manhole. The burial tape and sand fill around the drain were identified at approx. 8' deep, the drain line was not actually exposed due to groundwater intrusion into the excavation at an estimated rate of approx. 3-5 gallons per minute. The excavation was backfilled immediately due to potential health and safety issues (i.e. slope stability, the sidewalls of the excavation were unstable). I informed Dave that re-excavation and exposure of the line was planned for today at the eastern edge of the footer for the "L" slab. We agreed that if a section of drain line between the "L" slab and the manhole on 5<sup>th</sup> Street had to be abandoned in place to ensure worker safety, the pipe will be characterized, sampled and/or surveyed prior to grouting and abandoning in place. )

4:15 mtg at B442 Site; I advised Dave that the drain line had been exposed at approx. 6' deep at the base of the L slab footer. The pipe appeared to be cast iron and not clay as was originally anticipated, and the excavation was free of groundwater. The excavation is not acceptable for personnel entry at this time. Continued excavation of the line was planned for later in the week, and a plan for tapping and draining, and grouting or epoxy-filling the line would be developed as we expose more of the sewer line. We agreed that the sanitary sewer is currently considered to be contaminated and every attempt will be made to remove the sewer line back to the main line (as long as it is safe to do so), unless it can be shown to be free of contamination. The application of a fixident or filling with grout or epoxy is considered a temporary "fix" and not the final solution. The final disposition of this pipe will be deferred to the disposition of the process waste system.

I also advised Dave of the following;

- 1) Sections of the concrete slab from the Laundry side of Building 442 were being surveyed and released for transport to the 980 rubble pile on-site. Known contaminated portions of the "L" slab (i.e., 2 sumps and scale pit) were being considered and packaged as LLW. Some areas of the slab had been constructed using a black construction joint material. Some of the joint material had elevated radiological readings and that material and portions of concrete with the joint material were also being considered LLW at this time.
- 2) We also discussed results from a sample removed from the upper portion of a drain clean-out in the "L" slab. The oily-looking sediment material was discovered by a worker at the site when the Remediation subcontractor originally mobilized to the B442 site. Preliminary results of the sediment indicate 87,000,000 ppb bis (2-ethylhexyl) phthalate (a common vacuum pump oil). We agreed that the

characterization sampling of soils within the footprint of the "L" slab should include SVOAs. This sampling is already included in the IASAP Addendum for this project.

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**Contact Record Prepared By: Mark Burmeister**

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Required Distribution:

R. DiSalvo, RFFO  
L. Kilpatrick, RFFO  
N. Castenada, RFFO  
D. Shelton, K-H  
J. Legare, RFFO  
T. Rehder, USEPA  
S. Gunderson, CDPHE

S. Nesta, K-H RISS  
L. Butler, K-H RISS  
K. North, K-H ESS  
C. Deck, K-H Legal  
D. Mayo, K-H RISS  
J. Mead, K-H ESS  
L. Brooks, K-H ESS  
C. Spreng, CDPHE

Additional Distribution  
(choose names as applicable):

D. Kruchek, CDPHE  
J. Hindman, CDPHE  
E. Pottorff, CDPHE  
M. Broussard, K-H RISS  
L. Norland, K-H RISS  
A. Primrose, K-H RISS  
S. Tower, DOE  
G. Kleeman, USEPA

# ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE ER REGULATORY CONTACT RECORD

Date/Time: 7/1/02 4:15pm & 7/2/02 5:45pm

Site Contact(s): Mark Burmeister  
Phone: 303-966-5891

Regulatory Contact: Elizabeth Pottorff  
Phone: 303-692-3429

Agency: CDPHE

Purpose of Contact: B442 Slab Remediation Project

## Discussion

7/1/02

I informed Elizabeth via voice-mail at approx. 2:15 today that the B442 crew had excavated nearly 100% around the circumference of the B442 footers and that Radiological Operations/Engineering had given approval to remove and stockpile the concrete. I informed her that I intended to remove the footers and backfill the trenches in order to avoid any potential health and safety concerns, slope stability, etc. At 4:15, Elizabeth returned my voice-mail message and concurred with backfilling the trenches. We also discussed the elevated beta readings we have been finding along the inside of the footer wall on the upper 6"-10" where the concrete construction/expansion joint had been. I informed Elizabeth that the construction/expansion joint material had been sampled and I expected results tomorrow. Pending analytical results on this material, we would make a decision concerning the disposition of the footers. We agreed to speak again tomorrow once I received analytical results.

7/2/02

I called Elizabeth and left a voice-mail to inform her that the B442 crew had removed the last of the concrete footers, and we had begun excavation and exposure of the drain lines. Additionally, I explained the results of the gamma spectroscopy data on the concrete footers and construction joint material, and that the material had been determined by Radiological Engineering to be naturally occurring radioactive material (NORM) and was within the Rad. Con Table 2-2 limits for recycling concrete at the on-site rubble pile.

Contact Record Prepared By: Mark Burmeister

## Required Distribution:

R. DiSalvo, RFFO  
L. Kilpatrick, RFFO  
N. Castenada, RFFO  
D. Shelton, K-H  
J. Legare, RFFO  
T. Rehder, USEPA  
S. Gunderson, CDPHE

S. Nesta, K-H RISS  
L. Butler, K-H RISS  
K. North, K-H ESS  
C. Deck, K-H Legal  
D. Mayo, K-H RISS  
J. Mead, K-H ESS  
L. Brooks, K-H ESS  
C. Spreng, CDPHE

## Additional Distribution

(choose names as applicable):

D. Kruchek, CDPHE  
J. Hindman, CDPHE  
E. Pottorff, CDPHE  
M. Broussard, K-H RISS  
L. Norland, K-H RISS  
A. Primrose, K-H RISS  
S. Tower, DOE  
G. Kleeman, USEPA

## ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE ER REGULATORY CONTACT RECORD

**Date/Time:** July 28, 2004 / 1500

<b>Site Contact(s):</b>	Annette Primrose	Norma Castaneda
<b>Phone:</b>	303 966-4385	303 966-4226
<b>Regulatory Contact:</b>	David Kruchek	Harlen Ainscough
<b>Phone:</b>	303 692-3328	303 692-3337
<b>Agency:</b>	CDPHE	CDPHE

**Purpose of Contact:** Modifications to the 400-7 SAP

### **Discussion**

As previously suspected, fuel oil was discovered in the subsurface at locations within IHSS 129 during recent characterization activities. Because the amount of fuel oil is anticipated to trigger a remedial action, the remaining sampling locations in IHSS 129 will not be completed as planned. Based on the presumed extent of the excavation, these will be "no longer representative samples" after project completion. The effected sample locations are BX38-012, BX39-013, BX39-014, BX39-015, and BX39-016. Instead of these sample locations, the extent of the known area of fuel oil is being investigated by step-out sampling. We will ensure that sufficient samples are collected in the soils that are remaining to characterize these for VOC and radionuclide constituents.

In addition, BX38-011 and BX38-017 were anticipated to sample the soils under and around Valve Vault 16. The soil to the south of the valve vault is saturated with fuel oil. These sample locations will be combined, collected on the north side of the valve vault, and samples will be collected for radionuclides only.

**Contact Record Prepared By:** Annette Primrose

### Required Distribution:

M. Aguilar, USEPA  
H. Ainscough, CDPHE  
S. Bell, DOE-RFPO  
J. Berardini, K-H  
B. Birk, DOE-RFPO  
L. Brooks, K-H ESS  
L. Butler, K-H RISS  
G. Carnival, K-H RISS  
N. Castaneda, DOE-RFPO  
C. Deck, K-H Legal  
N. Demos, SSOC  
S. Gunderson, CDPHE  
M. Keating, K-H RISS  
D. Kruchek, CDPHE  
J. Legare, DOE-RFPO

D. Mayo, K-H RISS  
J. Mead, K-H ESS  
S. Nesta, K-H RISS  
L. Norland, K-H RISS  
K. North, K-H ESS  
E. Pottorff, CDPHE  
A. Primrose, K-H RISS  
R. Schassburger, DOE-RFPO  
S. Serreze, K-H RISS  
D. Shelton, K-H ESS  
C. Spreng, CDPHE  
S. Surovchak, DOE-RFPO  
J. Walstrom, K-H RISS  
K. Wiemelt, K-H RISS  
C. Zahm, K-H Legal

### Additional Distribution:

Gerry Kelly, K-H RISS  
Tom Hanson, URS  
Nan Elzinga, URS  
Sherry Lopez, K-H RISS  
Scott Maxey, URS  
Sam Garcia, USEPA  
Joe Hebert, K-H RISS

**ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE  
ER REGULATORY CONTACT RECORD**

**Date/Time:** July 30, 2002 / 4:30 pm

**Site Contact(s):** Annette Primrose  
**Phone:** 4385

**Regulatory Contact:** David Kruchek  
**Phone:** 303-692-3328

**Agency:** CDPHE

**Purpose of Contact:** Sample location changes for IHSS Group 400-7, B452 area

**Discussion** As described in the IASAP Addendum #IA-02-05 for IHSS Group 400-7, 4 surface and subsurface soil samples were to be collected in the 0-1/2 ft and 1/2 foot to 2 1/2 ft intervals in the area immediately adjacent and under B452. While these samples were primarily designed to determine if contamination was present from an historic sulfuric acid spill, a full suite of analyses were to be collected. However, during Decommissioning activities on July 30<sup>th</sup>, some of this soil was removed.

To meet the intent of the IASAP Addendum, on the afternoon of July 30<sup>th</sup> the following steps were taken:

- 4 soil samples were collected at the newly exposed surface. These samples are representative of the deeper interval at the locations identified in the IASAP Addendum.
- Surface and subsurface samples were collected as planned from a location previously beneath the B452 slab that was now exposed and relatively undisturbed.
- Grab samples were collected from the two piles of previously removed dirt and will be analyzed for the full suite of samples.
- All samples will be analyzed on a rush turnaround basis.

The RISS D&D Project covered the soil pile at the B850 area. The soil pile at the B452 area was not covered as it is located in the area where it was derived and it is expected to be of approximately the same concentrations as the surrounding soils.

It is expected that these soils will not exceed action levels as this area was anticipated not to require a remedial action. If these soil results exceed action levels, additional actions may be required and will be communicated when information is received.

**Contact Record Prepared by:** Annette Primrose

Required Distribution:

S. Bell, RFFO  
L. Brooks, K-H ESS  
L. Butler, K-H RISS  
C. Deck, K-H Legal  
R. DiSalvo, RFFO  
S. Gunderson, CDPHE  
J. Legare, RFFO

D. Mayo, K-H RISS  
J. Mead, K-H ESS  
S. Nesta, K-H RISS  
K. North, K-H ESS  
T. Rehder, USEPA  
D. Shelton, K-H  
C. Spreng, CDPHE  
E. Pottorff, CDPHE

Additional Distribution

(choose names as applicable):

M. Broussard, K-H RISS  
M. Burmeister, KH Team  
K. Kehler, K-H RISS  
G. Kleeman, USEPA  
D. Kruchek, CDPHE  
A. Primrose, K-H RISS  
S. Serreze, KH Team  
D. Strand, KH Team  
S. Tower, DOE

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**ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE  
ER REGULATORY CONTACT RECORD**

**Date/Time:** August 9, 2002 / 8:45 am

**Site Contact(s):** Annette Primrose  
**Phone:** 4385

**Regulatory Contact:** David Kruchek  
**Phone:** 303-692-3328

**Agency:** CDPHE

**Purpose of Contact:** Permission to regrade B452 area

**Discussion** As described in the IASAP Addendum #IA-02-05 for IHSS Group 400-7, 4 locations were to be sampled in the area immediately adjacent and under B452. In addition, 2 samples were collected at soil piles in the B850 and B452 areas that were derived from the B452 area.

Of these samples, there are 2 locations where the arsenic concentration is 20, exceeding the arsenic background value. One is at the soil pile near B850, the other is a sample from a transformer pad next to Central Ave not related to B452. Arsenic was not used at these locations and the value of 20 is well within the range of values we see at other non-impacted locations even though it is slightly above the official background value.

The remaining soil data from B452 soils are well below Tier 1 and Tier 2 action levels. Based on this data, the B452 area can be regraded.

**Contact Record Prepared by:** Annette Primrose

**Required Distribution:**

S. Bell, RFFO  
L. Brooks, K-H ESS  
L. Butler, K-H RISS  
C. Deck, K-H Legal  
R. DiSalvo, RFFO  
S. Gunderson, CDPHE  
J. Legare, RFFO

D. Mayo, K-H RISS  
J. Mead, K-H ESS  
S. Nesta, K-H RISS  
K. North, K-H ESS  
T. Rehder, USEPA  
D. Shelton, K-H  
C. Spreng, CDPHE  
E. Pottorff, CDPHE

**Additional Distribution**

(choose names as applicable):

M. Broussard, K-H RISS  
M. Burmeister, KH Team  
K. Kehler, K-H RISS  
G. Kleeman, USEPA  
D. Kruchek, CDPHE  
L. Norland, K-H RISS  
A. Primrose, K-H RISS  
S. Serreze, KH Team  
S. Tower, DOE

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**ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE  
ER REGULATORY CONTACT RECORD**

**Date/Time:** August 12, 2002 / 11:00 am

**Site Contacts:** Annette Primrose, Lane Butler, Marla Broussard, Lee Norland, Frank Gibbs,  
Scott Surovchak, Reg Tyler

**Phones:** 4385, 5245, 6007, 5223, 3559, 3551, 5927

**Regulatory Contacts:** Dave Kruchek, Steve Tarlton, Elizabeth Pottorff,  
**Phones:** 303-692-3328, 303-692-3423; 303-692-3429

**Agency:** CDPHE

**Purpose of Contact:** Sewer line backfill at B442 (IHSS Group 400-7)

**Discussion** As discussed at the ER Integration meeting on August 12th, during the remediation of the IHSS Group 400-7, Building 442 Laundry (B442L) slab, contamination was encountered within the associated sanitary sewer line. The sewer line was removed to a depth of greater than 6 feet below grade. Approximately 30' of 6" sanitary sewer line that connected B442 to the main sewer line has been sealed at both ends and left in place. The sewer line was removed to more than 6' below grade and to the point where cast iron pipe was joined to a 6" PVC pipe. A sludge sample shows that 4 nanoCuries uranium is present along with elevated metals and semi-volatiles within the cast iron sewer line. No related contamination was found outside the pipe. Because the remaining line is greater than 6 feet below grade and plugged at both ends, the sewer line is not expected to impact surface water or groundwater quality.

It was agreed that the sewer line can be left in place for now and this excavation can be backfilled. However, this section of the sewer line needs to be revisited as part of dispositioning the main sewer system.

**Contact Record Prepared by:** Annette Primrose

**Required Distribution:**

S. Bell, RFFO  
L. Brooks, K-H ESS  
L. Butler, K-H RISS  
C. Deck, K-H Legal  
R. DiSalvo, RFFO  
S. Gunderson, CDPHE  
J. Legare, RFFO

D. Mayo, K-H RISS  
J. Mead, K-H ESS  
S. Nesta, K-H RISS  
K. North, K-H ESS  
T. Rehder, USEPA  
D. Shelton, K-H  
C. Spreng, CDPHE  
E. Pottorff, CDPHE

**Additional Distribution**

**(choose names as applicable):**

M. Broussard, K-H RISS  
M. Burmeister, KH Team  
G. Kleeman, USEPA  
D. Kruchek, CDPHE  
L. Norland, K-H RISS  
A. Primrose, K-H RISS  
S. Serreze, KH Team

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**ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE  
ER REGULATORY CONTACT RECORD**

**Date/Time:** August 15, 2002 / 11:30 am  
**Site Contacts:** Annette Primrose  
**Phones:** 4385  
**Regulatory Contacts:** Dave Kruchek and Elizabeth Pottorff,  
**Phones:** 303-692-3328/303-692-3429  
**Agency:** CDPHE

**Purpose of Contact:** Backfill of soils at B442 (IHSS Group 400-7)

**Discussion** At the ER Integration meeting on August 12th, it was discussed that during the remediation of the IHSS Group 400-7, Building 442 (B442) slab, numerous Tier II exceedances for semi-volatile organic (SVOCs) were found in surface soils and are widely dispersed indicating that there were numerous sources. The SVOCs are polycyclic aromatic hydrocarbons (PAHs) that are commonly found in asphalt, crude oil, hydrocarbon fuels, coal, coal tar pitch, creosote, and roofing tar. These exceedances are related to:

- Areas previously covered by asphalt including walkways and parking lots,
- Roof drains (roofing tar contained these compounds),
- The building foundation (tar might have been used as a sealant), and
- The area potentially could have been sprayed with materials containing these compounds for weed suppression and dust control.

After the meeting, the SVOC exceedances were compared to the new PPRGs for wildlife worker and also to the residential PPRGs. In addition to the Tier II exceedances, uranium 235 and 238 exceed the new wildlife worker PPRGs. Fourteen additional analytes exceed the residential PPRGs including several VOCs, additional SVOCs and manganese.

About 95% of the data have been received and these data indicate that institutional controls will be necessary to prevent residential use. Additional institutional controls may be necessary for the wildlife worker and will be evaluated at a later date. Most of the data are very close to Tier II values. However, there are two areas with higher concentrations of SVOCs. One area has a Tier II sum of ratio value of 10, the other has a Tier II sum of ratio value of 35. At the sum of ratio value of 10 location, the only contaminant above Tier II action levels is Benzo(A)Anthracene. At the location with a sum of ratio value of 35, the contaminants above Tier II action levels are Benzo (A)Anthracene, DiBenz(A,H) Anthracene, Benzo(B)Fluoranthene, and Benzo(A)Pyrene. Even though these are still well below Tier I action levels, because these locations have higher concentrations of SVOCs above the surrounding areas, the surface soil will be remediated and confirmation samples collected. Regrading in these two locations will be delayed until the confirmation sample results are received. Additional actions may be taken based on the confirmation sample data and the remaining outstanding data.

The rest of the area can be backfilled and regraded.

Contact Record Prepared by: Annette Primrose

Required Distribution:

S. Bell, RFFO  
L. Brooks, K-H ESS  
L. Butler, K-H RISS  
C. Deck, K-H Legal  
R. DiSalvo, RFFO  
S. Gunderson, CDPHE  
J. Legare, RFFO

D. Mayo, K-H RISS  
J. Mead, K-H ESS  
S. Nesta, K-H RISS  
K. North, K-H ESS  
T. Rehder, USEPA  
D. Shelton, K-H  
C. Spreng, CDPHE  
E. Pottorff, CDPHE

Additional Distribution

(choose names as applicable):

M. Broussard, K-H RISS  
M. Burmeister, KH Team  
G. Kleeman, USEPA  
D. Kruchek, CDPHE  
L. Norland, K-H RISS  
A. Primrose, K-H RISS  
S. Serreze, KH Team  
D. Strand, KH Team

Contact Record 6/20/02  
Rev. 6/20/02

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**ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE  
ER REGULATORY CONTACT RECORD**

**Date/Time:** August 19, 2002 / 10:30 am  
**Site Contacts:** Mark Burmeister, Annette Primrose  
**Phones:** 5891  
**Regulatory Contacts:** Dave Kruchek  
**Phones:** 303-692-3328  
**Agency:** CDPHE

**Purpose of Contact:** Regrading of soils at B442 (IHSS Group 400-7) and B452/T452 (IHSS Group 600-2)

**Discussion**

In a telephone discussion this morning concerning the backfill of trenches and regrading of the B442 (IHSS Group 400-7) and B452/T452 (IHSS Group 600-2) sites, it was agreed that:

- 1) backfill of the trenches at the B442 site could proceed; (although one Tier II exceedance for beryllium was identified in the bottom of the trench below the sanitary sewer line, this soil will not be remediated due to its depth (greater than 6' below existing grade);
- 2) the soil stockpile from the "Hoffa-Box" and the B452 site could be utilized to fill in voids along the 6<sup>th</sup> Street excavation and the T452 area;
- 3) regrading of the B442 site would proceed, and some of the soil would potentially be used as fill to the east at the B452 and T452 areas; (close-out report will include the estimated volume of soil relocated, and the final elevations of grade, including any buried remaining infrastructure (e.g., utilities);
- 4) If soils exceeding Tier II were relocated to areas known to be less than Tier II, those areas would be identified and documented in a close-out report;
- 5) If soils from an area with soils less than Tier II were relocated to an area exceeding Tier II, those areas would be identified and documented in a close-out report.

Backfill and regrading is expected to begin on Tuesday, August 20, 2002.

**Contact Record Prepared by:** Mark Burmeister

**Required Distribution:**

S. Bell, RFFO  
L. Brooks, K-H ESS  
L. Butler, K-H RISS  
C. Deck, K-H Legal  
R. DiSalvo, RFFO  
S. Gunderson, CDPHE  
J. Legare, RFFO

D. Mayo, K-H RISS  
J. Mead, K-H ESS  
S. Nesta, K-H RISS  
K. North, K-H ESS  
T. Rehder, USEPA  
D. Shelton, K-H  
C. Spreng, CDPHE  
E. Pottorff, CDPHE

**Additional Distribution**

(choose names as applicable):

M. Broussard, K-H RISS  
M. Burmeister, KH Team  
G. Kleeman, USEPA  
D. Kruchek, CDPHE  
L. Norland, K-H RISS  
A. Primrose, K-H RISS  
S. Serreze, KH Team  
N. Demos, KH Team

## ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE ER REGULATORY CONTACT RECORD

**Date/Time:** September 17, 2004

**Site Contact(s):** Annette Primrose Norma Castaneda Joe Hebert  
**Phone:** 303 966-4385 303 966-4226 303 966-5933

**Regulatory Contact:** David Kruchek  
**Phone:** 303 692-3328  
**Agency:** CDPHE

**Purpose of Contact:** Confirmation samples for 400-7

### **Discussion**

Confirmation samples will be collected for the 400-7 fuel oil remedial action as follows:

- One sample will be collected from each side wall at about the level of the tank bottoms, approximately 8 feet above the bottom of the excavation
- One sample will be collected from the bottom of the excavation at the lowest point; south of Tank 1
- Samples will be collected in the middle and at the eastern end of the excavation for the fuel oil stained soil that followed the oil line to the east. Samples will be collected from the bottom and sidewalls of the excavation. Sidewall samples will be collected at approximately the level of the fuel oil line.

Samples will be analyzed for TPH at an offsite lab. Backfill will be based on field screen results. Additional excavation may be required based on the analytical results.

Visual and photographic evidence indicates that the oil contamination has been removed and the photos will be included in the closeout report. Therefore, the concrete tank support beams may be left in-place. The easternmost tank support fell over within the excavation as a result of excavation activities. The area around this support was already remediated. Therefore, no further action is required for this support. The remaining supports may be pushed over if necessary for safety and stability.

**Contact Record Prepared By:** Annette Primrose

### Required Distribution:

M. Aguilar, USEPA  
H. Ainscough, CDPHE  
S. Bell, DOE-RFPO  
J. Berardini, K-H  
B. Birk, DOE-RFPO  
L. Brooks, K-H ESS  
L. Butler, K-H RISS  
G. Carnival, K-H RISS  
N. Castaneda, DOE-RFPO

D. Mayo, K-H RISS  
J. Mead, K-H ESS  
S. Nesta, K-H RISS  
L. Norland, K-H RISS  
K. North, K-H ESS  
E. Pottorff, CDPHE  
A. Primrose, K-H RISS  
R. Schassburger, DOE-RFPO  
S. Serreze, K-H RISS

### Additional Distribution:

Gerry Kelly, K-H RISS  
Tom Hanson, URS  
Nan Elzinga, URS  
Sherry Lopez, K-H RISS  
Scott Maxey, URS  
Sam Garcia, USEPA  
Joe Hebert, K-H RISS

C. Deck, K-H Legal  
N. Demos, SSOC  
S. Gunderson, CDPHE  
M. Keating, K-H RISS  
D. Kruchek, CDPHE  
J. Legare, DOE-RFPO

D. Shelton, K-H ESS  
C. Spreng, CDPHE  
S. Surovchak, DOE-RFPO  
J. Walstrom, K-H RISS  
K. Wiemelt, K-H RISS  
C. Zahm, K-H Legal

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## ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE ER REGULATORY CONTACT RECORD

**Date/Time:** September 29, 2004 / 10:00 AM

**Site Contact(s):** Joe Hebert  
**Phone:** 303-966-4090

**Regulatory Contact:** David Kruchek  
**Phone:** 303-692-3328

**Agency:** CDPHE

**Purpose of Contact:** Backfill of excavations at the 400-7 (IHSS 129 (443) ) Remediation Project

### Discussion

The purpose of this ER Contact Record is to confirm that the 400-7 (IHSS 129) Remediation Project has approval from the CDPHE for backfill of the excavations already performed that are associated with the main tank #6Fuel Oil Tank Basin.

**NOTE:** All required sampling in the tank basin area has been performed and is summarized in the table below. All six sample locations were originally sampled on 9/20/04 and the analytical results indicated that three were below action level. The site was reworked. Additional soil was removed ranging from 3 to 6 inches in the pit bottom and sides of the pit, to 4 additional feet in the mixing area. The area was re-sampled on 9/27, and all field screens were well below action levels. The 400-7 (IHSS 129) Project understands and accepts the risk that should future analytical results indicate contamination in excess of the action levels, remediation and re-excavation may be required.

Work is continuing in the plume to the east that followed the old underground steam line and involved the loose fill around Valve Vault 16. Therefore we will not backfill the south east corner of the tank basin adjacent to this ongoing work.

400-7 Sampling Data	9/20/04 Field Screening Results. (TPH ppm)	9/24/04 Offsite Lab	9/27/04 Field Screening Results. (TPH ppm)
		Results of 9/20/04 Samples. (TPH ppm)	
South	5730	<b>4390</b>	<b>429</b>
Trench (pit bottom)	10200	10100	<b>1560</b>
East	7710	<b>150</b>	<b>29.4</b>
West	17960	8480	<b>ND</b>
North	<b>194</b>	<b>380</b>	N/A
Mixing Area	12,000	no analysis	<b>50</b>

***bold italic = below action level.***

**Contact Record Prepared By:** Joe Hebert

Required Distribution

Required Distribution:

M. Aguilar, USEPA  
H. Ainscough, CDPHE  
S. Bell, DOE-RFPO  
J. Berardini, K-H  
B. Birk, DOE-RFPO  
L. Brooks, K-H ESS  
L. Butler, K-H RISS  
G. Carnival, K-H RISS  
N. Castaneda, DOE-RFPO

D. Mayo, K-H RISS  
J. Mead, K-H ESS  
S. Nesta, K-H RISS  
L. Norland, K-H RISS  
K. North, K-H ESS  
E. Pottorff, CDPHE  
A. Primrose, K-H RISS  
R. Schassburger, DOE-RFPO  
S. Serreze, K-H RISS

Additional Distribution:

Gerry Kelly, K-H RISS  
Tom Hanson, URS  
Nan Elzinga, URS  
Sherry Lopez, K-H RISS  
Scott Maxey, URS  
Sam Garcia, USEPA  
Joe Hebert, K-H RISS

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Additional Distribution

H. Ainscough, CDPHE  
J. Hebert, K-H RISS  
G. Kelly, K-H RISS

## ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE ER REGULATORY CONTACT RECORD

**Date/Time:** October 18, 2004

**Site Contact(s):** Joe Hebert                      Annette Primrose                      Norma Castaneda  
**Phone:** 303 966-5933                      303 966-4385                      303 966-4226

**Regulatory Contact:** David Kruchek  
**Phone:** 303 692-3328  
**Agency:** CDPHE

**Purpose of Contact:** Confirmation samples for 400-7

### Discussion

The fuel oil stained soils following the pipeline to the east extends farther east than originally anticipated. Samples will be collected every 100 feet along the excavation for the fuel oil stained soil that followed the pipeline to the east, per the 9/17/04 contact record. We will collect samples at the east end of the excavation.

We will take a TPH sample at depth south of Valve Vault 16 where the heaviest oil concentration was found and removed.

Due to the discovery of an additional spill area immediately north of the oil contaminated soil that followed the steam line to the east. This area was approximately oval in shape about 35 ft. long in the east-west axis and 20 ft wide in the north-south axis. The oil-stained soil was removed in this area, and in essence widened the steam line soil removal trench. The oil-stained soil was generally 12 to 18 inches below the surface and ranged from 5 to 15 inches thick. Samples will also be taken in the center, north side and at the eastern point of this spill area.

**Contact Record Prepared By:** Joe Hebert

### Required Distribution:

M. Aguilar, USEPA  
H. Ainscough, CDPHE  
S. Bell, DOE-RFPO  
J. Berardini, K-H  
B. Birk, DOE-RFPO  
L. Brooks, K-H ESS  
L. Butler, K-H RISS  
G. Carnival, K-H RISS  
N. Castaneda, DOE-RFPO  
C. Deck, K-H Legal  
N. Demos, SSOC  
S. Gunderson, CDPHE

D. Mayo, K-H RISS  
J. Mead, K-H ESS  
S. Nesta, K-H RISS  
L. Norland, K-H RISS  
K. North, K-H ESS  
E. Pottorff, CDPHE  
A. Primrose, K-H RISS  
R. Schassburger, DOE-RFPO  
S. Serreze, K-H RISS  
D. Shelton, K-H ESS  
C. Spreng, CDPHE  
S. Surovchak, DOE-RFPO

### Additional Distribution:

Gerry Kelly, K-H RISS  
Tom Hanson, URS  
Nan Elzinga, URS  
Sherry Lopez, K-H RISS  
Scott Maxey, URS  
Sam Garcia, USEPA  
Joe Hebert, K-H RISS

M. Keating, K-H RISS  
D. Kruchek, CDPHE  
J. Legare, DOE-RFPO

J. Walstrom, K-H RISS  
K. Wiemelt, K-H RISS  
C. Zahm, K-H Legal

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## ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE ER REGULATORY CONTACT RECORD

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**Date/Time:** October 26, 2004

**Site Contact(s):** Joe Hebert                      Norma Castaneda  
**Phone:** 303 966-5933                      303 966-4226

**Regulatory Contact:** David Kruchek  
**Phone:** 303 692-3328  
**Agency:** CDPHE

---

**Purpose of Contact:** Backfill and Remaining Pipeline Bedding Material.

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### **Discussion**

The fuel oil stained soils following the pipeline to the east were excavated and removed, until there was no more visual evidence of fuel oil in the surrounding soil. This occurred approximately 120 feet east of the east side of 5<sup>th</sup> Street. This is the eastern extent of the 400-7 (IHSS 129) Fuel Oil #6 spill and soil removal activities are complete. Fourteen samples were taken in the eastern excavation areas per previous agreement. Field screening results were well below the 5000 ppm TPH action level. Backfilling will proceed at risk pending the analytical lab results.

While removing the fuel oil stained soils that followed the steam and condensate line, the steam and condensate lines were removed. It was discovered that these pipes were buried about 5 feet deep. They are surrounded by sand and clay bedding material. The horizontal surface of this pipe bed (where the pipes rest) is saturated with a tarry substance. This appears to have been placed when the pipeline was installed and is not Fuel Oil #6. Kaiser-Hill intends to leave the remaining pipe in place. These pipes are not insulated and there are no asbestos concerns. The potential impact of the elements of 400-7 to groundwater is being evaluated as part of the groundwater IM/IRA.

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**Contact Record Prepared By:** Joe Hebert

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### Required Distribution:

M. Aguilar, USEPA  
H. Ainscough, CDPHE  
S. Bell, DOE-RFPO  
J. Berardini, K-H  
B. Birk, DOE-RFPO  
L. Brooks, K-H ESS  
L. Butler, K-H RISS  
G. Carnival, K-H RISS  
N. Castaneda, DOE-RFPO  
C. Deck, K-H Legal

D. Mayo, K-H RISS  
J. Mead, K-H ESS  
S. Nesta, K-H RISS  
L. Norland, K-H RISS  
K. North, K-H ESS  
E. Pottorff, CDPHE  
A. Primrose, K-H RISS  
R. Schassburger, DOE-RFPO  
S. Serreze, K-H RISS  
D. Shelton, K-H ESS

### Additional Distribution:

Gerry Kelly, K-H RISS  
Tom Hanson, URS  
Nan Elzinga, URS  
Sherry Lopez, K-H RISS  
Scott Maxey, URS  
Sam Garcia, USEPA  
Joe Hebert, K-H RISS

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N. Demos, SSOC  
S. Gunderson, CDPHE  
M. Keating, K-H RISS  
D. Kruchek, CDPHE  
J. Legare, DOE-RFPO

C. Spreng, CDPHE  
S. Surovchak, DOE-RFPO  
J. Walstrom, K-H RISS  
K. Wiemelt, K-H RISS  
C. Zahm, K-H Legal

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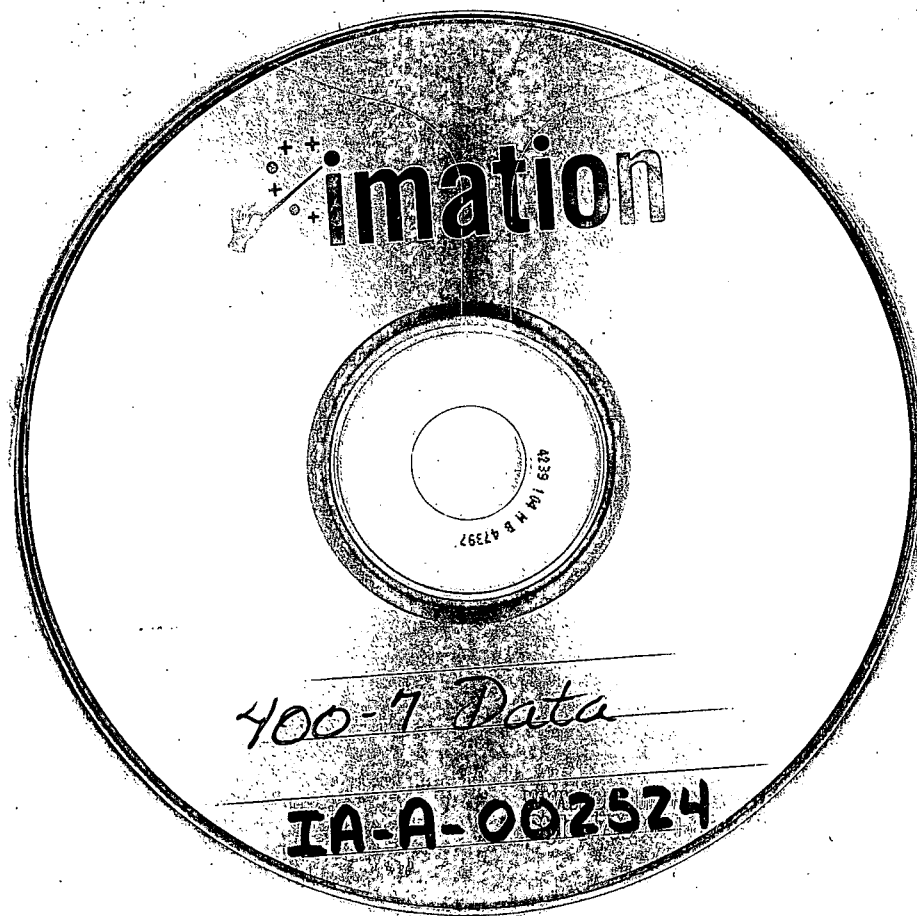
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**Enclosure**

**Compact Disc Containing Standardized Real and Quality  
Control Acceleration Action Data**



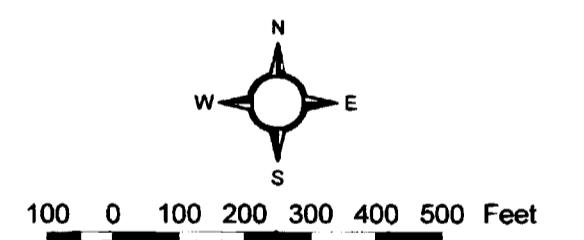
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CERCLA Administrative Record Database									
Activity	Level	Doc. No	Doc Date	Est Pages	Routine	Status	Print		
IA	A	002524	12/01/2004	E	154	YES, ROUTINE	PRELIM		
Title (Final) Closeout Report for IHSS Group 400-7									
Internal Code: Ref: 05-RF-00066; KLV-003-05				Rev No		Tag L			
Document Type: CLOSEOUT REPORT									
Date Received		01/18/2005		Create Date		02/16/2005			
Login Date		02/16/2005		Login By		JCR			
Data Entry Date		02/16/2005		Indexer		JCR			
Receipt Type				Under Review					
Prelim History				Public History					
Core A/R Document?									
Title/Subject: Acronym									
(Final) Closeout Report for IHSS Group 400-7, dated December 2004. This report summarizes accelerated action activities conducted at IHSS Group 400-7. Activities were conducted between June 2002 and October 2004, and included the following:									
Comments: Acronym									
See January 10, 2005 approval under AR IA-A-002521. 1 CD attached to document.									

Figure 2  
IHSS Group 400-7  
Pre-Accelerated Action  
Soil Sampling  
Locations and Results

KEY

- Location with soil concentrations less than WRW ALs and greater than background means plus 2 standard deviations or MDLs

- IHSS
- Demolished building
- Standing building
- OPWL
- NPWL
- Valve vault
- Sewer line
- Storm drain
- Paved road



Scale 1:3,500

State Plane Coordinate Projection  
Colorado Central Zone  
Datum: NAD 27

U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Prepared by:



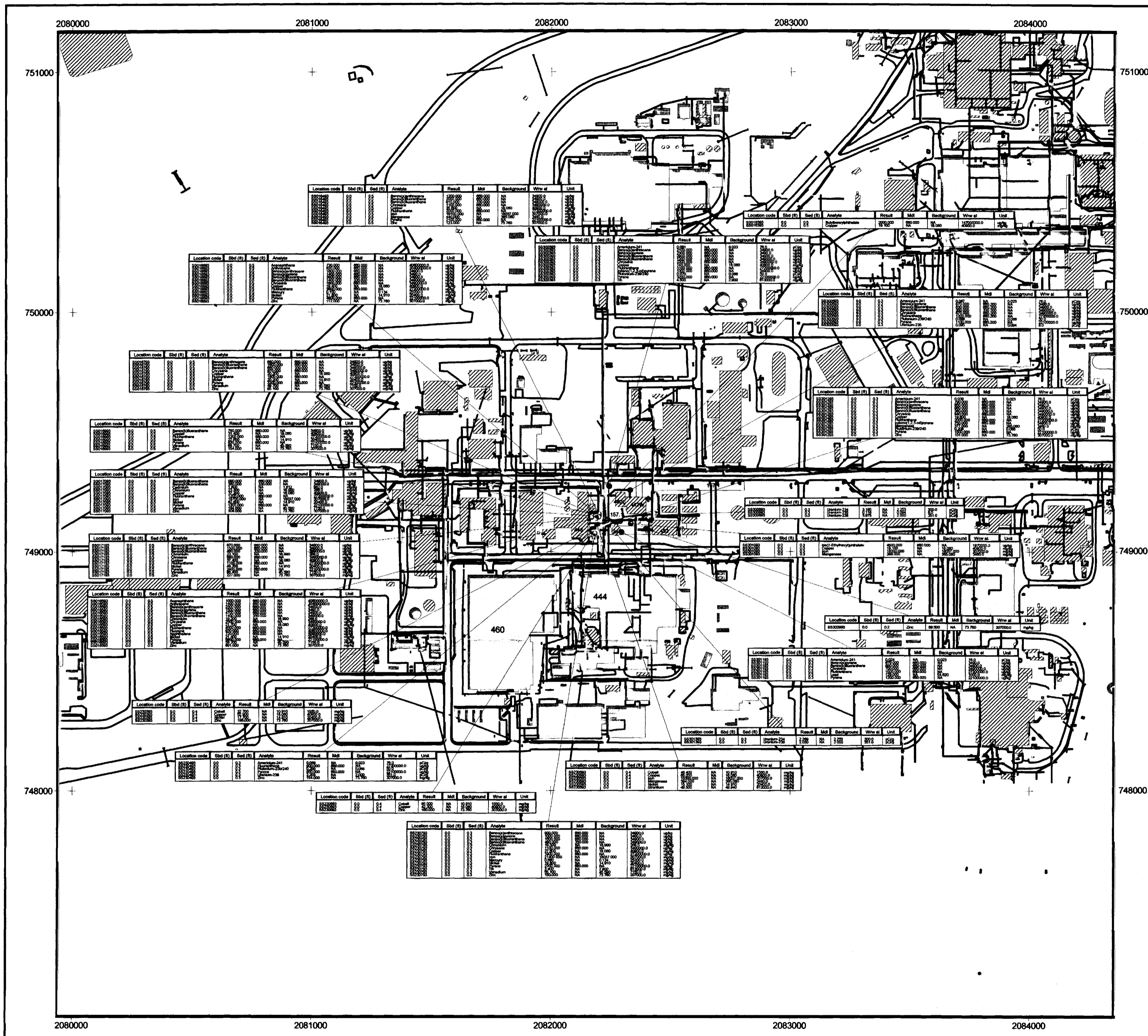
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400-7.apr

Date: 12/28/04

IA-A-002524 pg. 26



2081000 2081500 2082000 2082500 2083000 2083500

2081000 2081500 2082000 2082500 2083000 2083500

Figure 3  
Surface Soil Characterization Results  
Greater than Background Means  
Plus Two Standard Deviations or  
RLs, Eastern Portion of  
IHSS Group 400-7

KEY

- Sampling location with concentration greater than WRW AL
- Sampling location with concentrations less than WRW ALs
- Sampling location with concentrations less than background or RLs

— Paved road

— IHSS

— Demolished building

— Standing building



Scale = 1: 1600

200 0 200 Feet

State Plane Coordinate Projection  
Colorado Central Zone  
Datum: NAD 27

U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Date: 12.28.04

Prepared by:



Prepared for:



File: W:\Projects\Fy2004\400-7\400\_7\_postings\_111504.apr

Location	Analyte	Result	Mdl. rl	Wrw	Background	Unit
BY39-006	Acenaphthene	57.00	47	4080000.0	NA	ug/kg
BY39-006	Anthracene	640.00	88	2400000.0	NA	ug/kg
BY39-006	Benzo(a)anthracene	240.00	44	34900.0	NA	ug/kg
BY39-006	Benzo(a)pyrene	610.00	110	34900.0	NA	ug/kg
BY39-006	Benzo(b)fluoranthene	610.00	110	34900.0	NA	ug/kg
BY39-006	Chrysene	2100.00	99	34900.0	NA	ug/kg
BY39-006	Fluoranthene	1300.00	65	2400000.0	NA	ug/kg
BY39-006	Indeno(1,2,3-cd)pyrene	1300.00	45	2400000.0	NA	ug/kg
BY39-006	Pyrene	0.18	NA	8.0	0.094	ug/kg
BY39-006	Uranium-235					PC/g
BY39-006	Uranium-238					PC/g

Location	Analyte	Result	Mdl. rl	Wrw	Background	Unit
BY39-003	Acenaphthene	120.00	47	4080000.0	NA	ug/kg
BY39-003	Anthracene	230.00	80	2400000.0	NA	ug/kg
BY39-003	Benzo(a)anthracene	230.00	39	34900.0	NA	ug/kg
BY39-003	Benzo(a)pyrene	230.00	100	34900.0	NA	ug/kg
BY39-003	Benzo(b)fluoranthene	230.00	100	34900.0	NA	ug/kg
BY39-003	Chrysene	620.00	99	34900.0	NA	ug/kg
BY39-003	Fluoranthene	230.00	65	2400000.0	NA	ug/kg
BY39-003	Indeno(1,2,3-cd)pyrene	240.00	45	2400000.0	NA	ug/kg
BY39-003	Pyrene	240.00	41	2400000.0	NA	ug/kg

Location	Analyte	Result	Mdl. rl	Wrw	Background	Unit
BY39-002	2-Methylnaphthalene	220.00	53	2040000.0	NA	ug/kg
BY39-002	Acenaphthene	340.00	NA	2400000.0	NA	ug/kg
BY39-002	Aluminum	21400.00	NA	16902.000	NA	mg/kg
BY39-002	Antimony	10.00	21	34900.0	NA	ug/kg
BY39-002	Benzo(a)anthracene	10.00	39	34900.0	NA	ug/kg
BY39-002	Benzo(a)pyrene	10.00	110	34900.0	NA	ug/kg
BY39-002	Benzo(b)fluoranthene	10.00	110	34900.0	NA	ug/kg
BY39-002	Benzo(k)fluoranthene	10.00	110	34900.0	NA	ug/kg
BY39-002	Chromium	150.00	NA	16.990	NA	ug/kg
BY39-002	Chrysene	120.00	NA	34900.0	NA	ug/kg
BY39-002	Copper	20.00	NA	16.060	NA	ug/kg
BY39-002	Fluoranthene	210.00	NA	2400000.0	NA	ug/kg
BY39-002	Indeno(1,2,3-cd)pyrene	210.00	NA	2400000.0	NA	ug/kg
BY39-002	Iron	18200.00	NA	18037.000	NA	mg/kg
BY39-002	Lithium	15.00	NA	20400.0	NA	ug/kg
BY39-002	Nickel	15.00	NA	14.910	NA	mg/kg
BY39-002	Strontium	6.40	NA	61300.0	NA	ug/kg
BY39-002	Uranium-235	0.04	NA	48.840	NA	ug/kg
BY39-002	Uranium-238	6.00	NA	7150.0	NA	ug/kg
BY39-002	Zinc			45.590	NA	mg/kg

Location	Analyte	Result	Mdl. rl	Wrw	Background	Unit
BY39-001	Pyrene	81.00	43	2210000.0	NA	ug/kg
BY39-001	Strontium	24.50	NA	61300.0	NA	ug/kg
BY39-001	Uranium-234				48.840	ug/kg
BY39-001	Uranium-238	2.55	NA	351.0	2.000	PC/g

Location	Analyte	Result	Mdl. rl	Wrw	Background	Unit
BY39-004	Aluminum	21400.00	NA	16902.000	NA	mg/kg
BY39-004	Benzo(a)anthracene	95.00	39	34900.0	NA	ug/kg
BY39-004	Benzo(a)pyrene	10.00	110	34900.0	NA	ug/kg
BY39-004	Benzo(b)fluoranthene	10.00	110	34900.0	NA	ug/kg
BY39-004	Benzo(k)fluoranthene	10.00	110	34900.0	NA	ug/kg
BY39-004	Chromium	150.00	NA	16.990	NA	ug/kg
BY39-004	Chrysene	120.00	NA	34900.0	NA	ug/kg
BY39-004	Copper	20.00	NA	16.060	NA	ug/kg
BY39-004	Fluoranthene	210.00	NA	2400000.0	NA	ug/kg
BY39-004	Indeno(1,2,3-cd)pyrene	210.00	NA	2400000.0	NA	ug/kg
BY39-004	Iron	18200.00	NA	18037.000	NA	mg/kg
BY39-004	Lithium	15.00	NA	20400.0	NA	ug/kg
BY39-004	Nickel	15.00	NA	14.910	NA	mg/kg
BY39-004	Strontium	6.40	NA	61300.0	NA	ug/kg
BY39-004	Uranium-235	0.04	NA	48.840	NA	ug/kg
BY39-004	Uranium-238	6.00	NA	7150.0	NA	ug/kg
BY39-004	Zinc			45.590	NA	mg/kg

Location	Analyte	Result	Mdl. rl	Wrw	Background	Unit
BY39-009	Acenaphthene	47.00	46	4080000.0	NA	ug/kg
BY39-009	Anthracene	520.00	89	2400000.0	NA	ug/kg
BY39-009	Benzo(a)anthracene	230.00	39	34900.0	NA	ug/kg
BY39-009	Benzo(a)pyrene	230.00	100	34900.0	NA	ug/kg
BY39-009	Benzo(b)fluoranthene	230.00	100	34900.0	NA	ug/kg
BY39-009	Benzo(k)fluoranthene	230.00	100	34900.0	NA	ug/kg
BY39-009	Chromium	230.00	NA	16.990	NA	ug/kg
BY39-009	Chrysene	610.00	97	34900.0	NA	ug/kg
BY39-009	Fluoranthene	230.00	65	2400000.0	NA	ug/kg
BY39-009	Indeno(1,2,3-cd)pyrene	230.00	45	2400000.0	NA	ug/kg
BY39-009	Pyrene	590.00	40	2210000.0	NA	ug/kg

Location	Analyte	Result	Mdl. rl	Wrw	Background	Unit
BY39-000	Aluminum	16900.00	NA	16902.000	NA	mg/kg
BY39-000	Benzo(a)anthracene	61.00	39	34900.0	NA	ug/kg
BY39-000	Benzo(a)pyrene	61.00	110	34900.0	NA	ug/kg
BY39-000	Benzo(b)fluoranthene	61.00	110	34900.0	NA	ug/kg
BY39-000	Benzo(k)fluoranthene	61.00	110	34900.0	NA	ug/kg
BY39-000	Chromium	150.00	NA	16.990	NA	ug/kg
BY39-000	Chrysene	120.00	NA	34900.0	NA	ug/kg
BY39-000	Fluoranthene	210.00	NA	2400000.0	NA	ug/kg
BY39-000	Indeno(1,2,3-cd)pyrene	210.00	NA	2400000.0	NA	ug/kg
BY39-000	Pyrene	130.00	NA	2400000.0	NA	ug/kg
BY39-000	Uranium-235	0.10	NA	48.840	NA	ug/kg
BY39-000	Uranium-238	0.10	NA	351.0	2.000	PC/g

Location	Analyte	Result	Mdl. rl	Wrw	Background	Unit
BY38-007	Aluminum	23900.00	NA	16902.000	NA	mg/kg
BY38-007	Iron	17300.00	NA	18037.000	NA	mg/kg
BY38-007	Lithium	13.00	NA	20400.0	NA	ug/kg
BY38-007	Pyrene	0.13	NA	8.0	0.094	ug/kg
BY38-007	Uranium-235					PC/g

Location	Analyte	Result	Mdl. rl	Wrw	Background	Unit
BY38-000	Antimony	0.50	NA	495.0	0.470	mg/kg
BY38-000	Benzo(a)anthracene	0.20	NA	34900.0	NA	ug/kg
BY38-000	Chromium	26300.00	NA	16.990	NA	ug/kg
BY38-000	Copper	26300.00	NA	16.060	NA	ug/kg
BY38-000	Iron	18037.00	NA	18037.000	NA	mg/kg
BY38-000	Strontium	61300.00	NA	61300.0	NA	ug/kg
BY38-000	Uranium-235	0.15	NA	48.840	NA	ug/kg
BY38-000	Uranium-238				0.094	PC/g

Location	Analyte	Result	Mdl. rl	Wrw	Background	Unit
BY38-004	Aluminum	25200.00	NA	16902.000	NA	mg/kg
BY38-004	Beryllium	1.70	NA	0.590	0.590	ug/kg
BY38-004	Chromium	100.00	NA	16.990	NA	ug/kg
BY38-004	Fluoranthene	100.00	NA	2400000.0	NA	ug/kg
BY38-004	Iron	15000.00	NA	18037.000	NA	mg/kg
BY38-004	Lithium	15.00	NA	20400.0	NA	ug/kg
BY38-004	Pyrene	15.00	NA	2400000.0	NA	ug/kg
BY38-004	Uranium-235	0.10	NA	48.840	NA	ug/kg
BY38-004	Uranium-238	0.10	NA	351.0	2.000	PC/g
BY38-004	Vanadium	46.90	NA	7150.0	NA	ug/kg

Location	Analyte	Result	Mdl. rl	Wrw	Background	Unit
BY38-004	Aluminum	17100.00	NA	16902.000	NA	mg/kg
BY38-004	Antimony	0.01	NA	495.0	0.470	mg/kg
BY38-004	Uranium-234	5.01	NA	253.0	2.000	PC/g
BY38-004	Uranium-238	5.01	NA	351.0	2.000	PC/g

Location	Analyte	Result	Mdl. rl	Wrw	Background	Unit
BY38-005	Benzo(a)anthracene	45.00	40	34900.0	NA	ug/kg
BY38-005	Chromium	21.00	NA	16.990	NA	ug/kg
BY38-005	Fluoranthene	100.00	NA	2400000.0	NA	ug/kg
BY38-005	Pyrene	85.00	NA	2400000.0	NA	ug/kg
BY38-005	Uranium-235				0.094	PC/g

Location	Analyte	Result	Mdl. rl	Wrw	Background	Unit
BY38-005	Benzo(a)anthracene	55.00	40	34900.0	NA	ug/kg
BY38-005	Chrysene	65.00	64	34900.0	NA	ug/kg
BY38-005	Fluoranthene	110.00	41	2400000.0	NA	ug/kg
BY38-005	Pyrene					ug/kg

Location	Analyte	Result	Mdl. rl	Wrw	Background	Unit
BY38-007	Acenaphthene	110.00	46	4080000.0	NA	ug/kg
BY38-007	Anthracene	360.00	89	2400000.0	NA	ug/kg
BY38-007	Benzo(a)anthracene	230.00	39	34900.0	NA	ug/kg
BY38-007	Benzo(a)pyrene	230.00	100	34900.0	NA	ug/kg
BY38-007	Benzo(b)fluoranthene	230.00	100	34900.0	NA	ug/kg
BY38-007	Chrysene	630.00	97	34900.0	NA	ug/kg
BY38-007	Fluoranthene	230.00	65	2400000.0	NA	ug/kg
BY38-007	Indeno(1,2,3-cd)pyrene	230.00	45	2400000.0	NA	ug/kg
BY38-007	Pyrene	670.00	40	2210000.0	NA	ug/kg

Location	Analyte	Result	Mdl. rl	Wrw	Background	Unit
BY38-005	Aluminum	21400.00	NA	16902.000	NA	mg/kg
BY38-005	Benzo(a)anthracene	76.00	39	34900.0	NA	ug/kg
BY38-005	Benzo(a)pyrene	76.00	110	34900.0	NA	ug/kg
BY38-005	Benzo(b)fluoranthene	76.00	110	34900.0	NA	ug/kg
BY38-005	Benzo(k)fluoranthene	76.00	110	34900.0	NA	ug/kg
BY38-005	Chromium	150.00	NA	16.990	NA	ug/kg
BY38-005	Chrysene	120.00	NA	34900.0	NA	ug/kg
BY38-005	Fluoranthene	210.00	NA	2400000.0	NA	ug/kg
BY38-005	Indeno(1,2,3-cd)pyrene	210.00	NA	2400000.0	NA	ug/kg
BY38-005	Pyrene	160.00	NA	2400000.0	NA	ug/kg
BY38-005	Uranium-235	0.10	NA	48.840	NA	ug/kg
BY38-005	Uranium-238	46.80	NA	7150.0	NA	ug/kg

Figure 4  
Surface Soil Characterization Results  
Greater than Background Means  
Plus Two Standard Deviations or  
RLs, Western Portion of  
IHSS Group 400-7

KEY

- Sampling location with concentration greater than WRW AL
- Sampling location with concentrations less than WRW ALs
- Sampling location with concentrations less than background or RLs

Paved road

IHSS

UBC

Demolished building

Standing building



Scale = 1: 1450

200 0 200 Feet

State Plane Coordinate Projection  
Colorado Central Zone  
Datum: NAD 27

U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Date: 12.28.04

Prepared by:



Prepared for:



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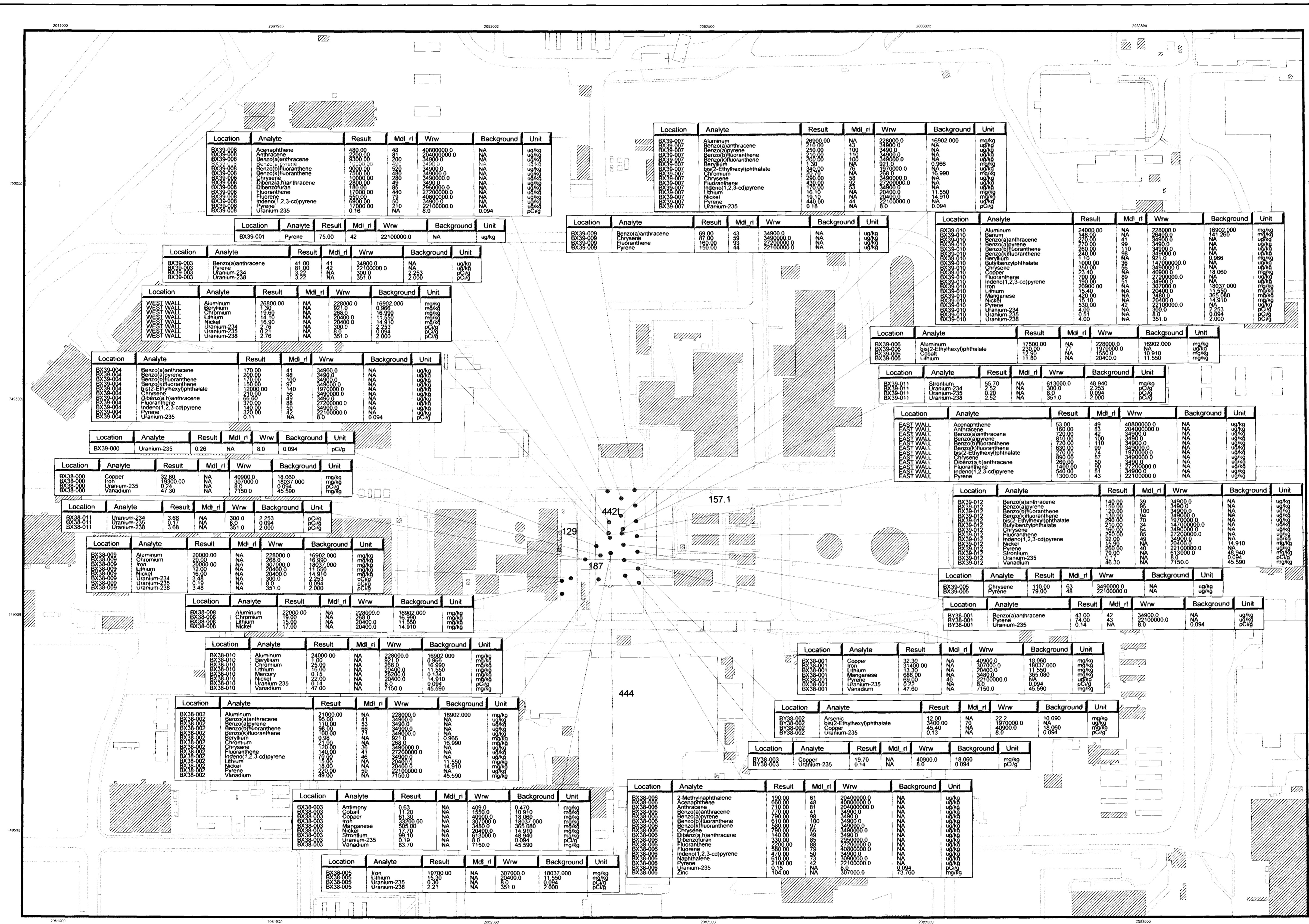


Figure 5  
Subsurface Soil Characterization Results  
Greater than Background Means  
Plus Two Standard Deviations or  
RLs, Eastern Portion of  
IHSS Group 400-7

KEY

- Sampling location with concentration greater than WRW AL
- Sampling location with concentrations less than WRW ALs
- Sampling location with concentrations less than background or RLs

Paved road

IHSS

Demolished building

Standing building



Scale = 1: 1725

250 0 250 Feet

State Plane Coordinate Projection  
Colorado Central Zone  
Datum: NAD 27

U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Date: 12.28.04

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Figure 7  
IHSS Group 400-7  
Soil TPH Concentrations  
Greater than RLs

KEY

- Sampling location with concentration greater than WRW AL
- Sampling location with concentrations less than WRW ALs

- ▬ Paved road
- IHSS
- ▨ Demolished building
- Standing building



Scale = 1: 450

50 0 50 Feet

State Plane Coordinate Projection  
Colorado Central Zone  
Datum: NAD 27

U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Date: 12.28.04

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Prepared for:



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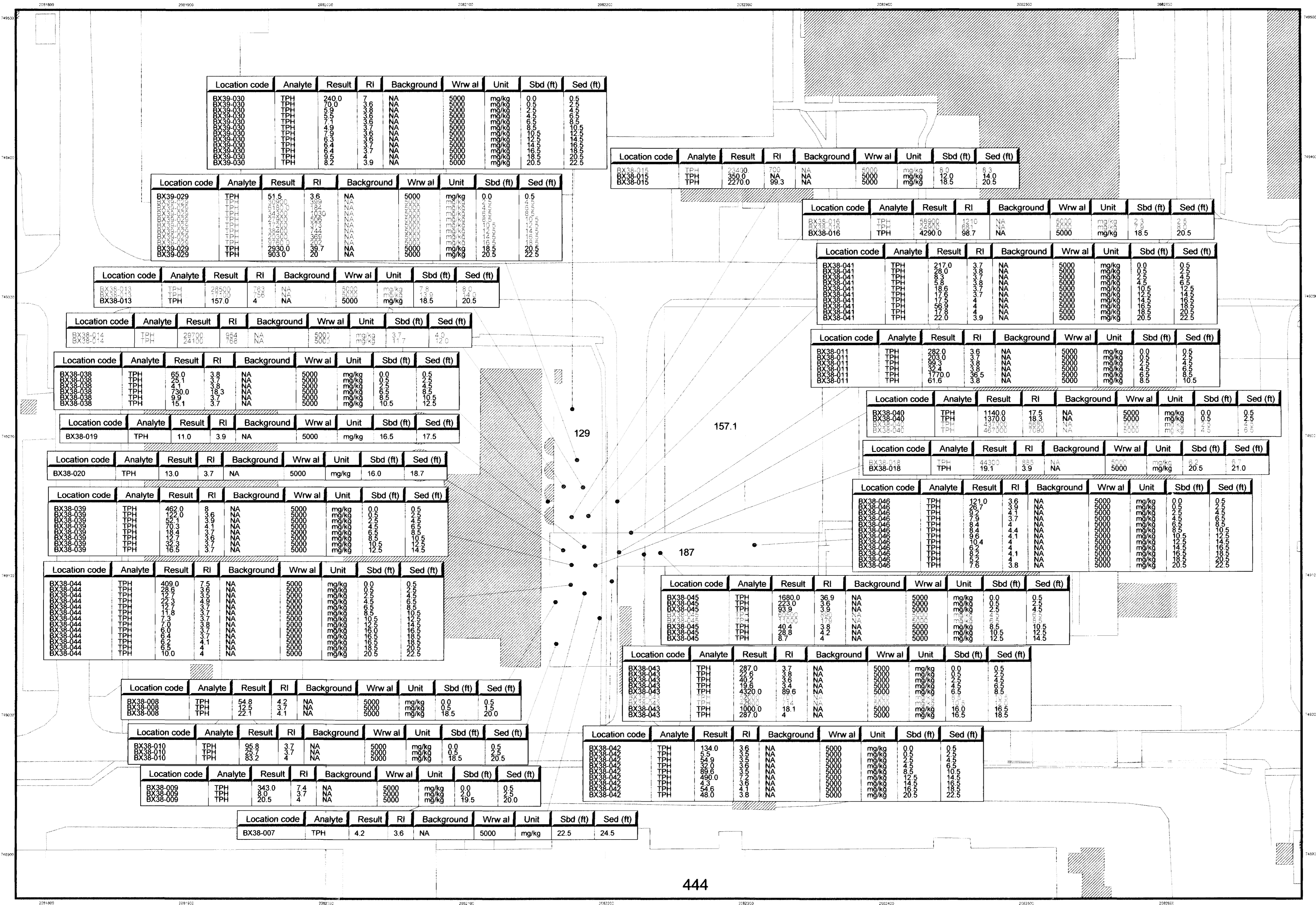
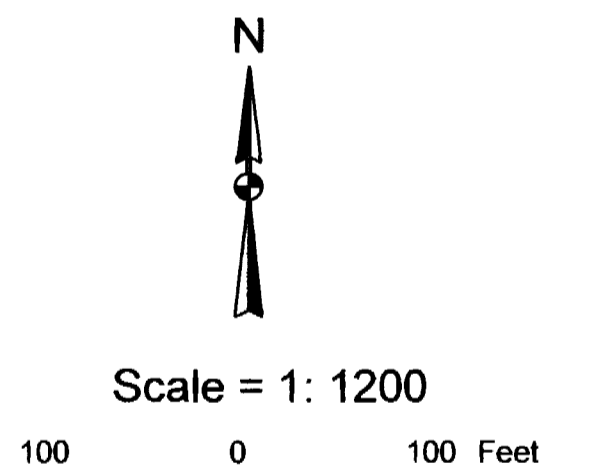


Figure 10  
Residual Contamination in Surface  
and Subsurface Soil,  
Eastern Portion of IHSS Group 400-7

KEY


- Sampling location with concentrations less than WRW ALs

- Paved road
- IHSS
- Demolished building
- Standing building



State Plane Coordinate Projection  
Colorado Central Zone  
Datum: NAD 27

U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Prepared by: 

Prepared for: 

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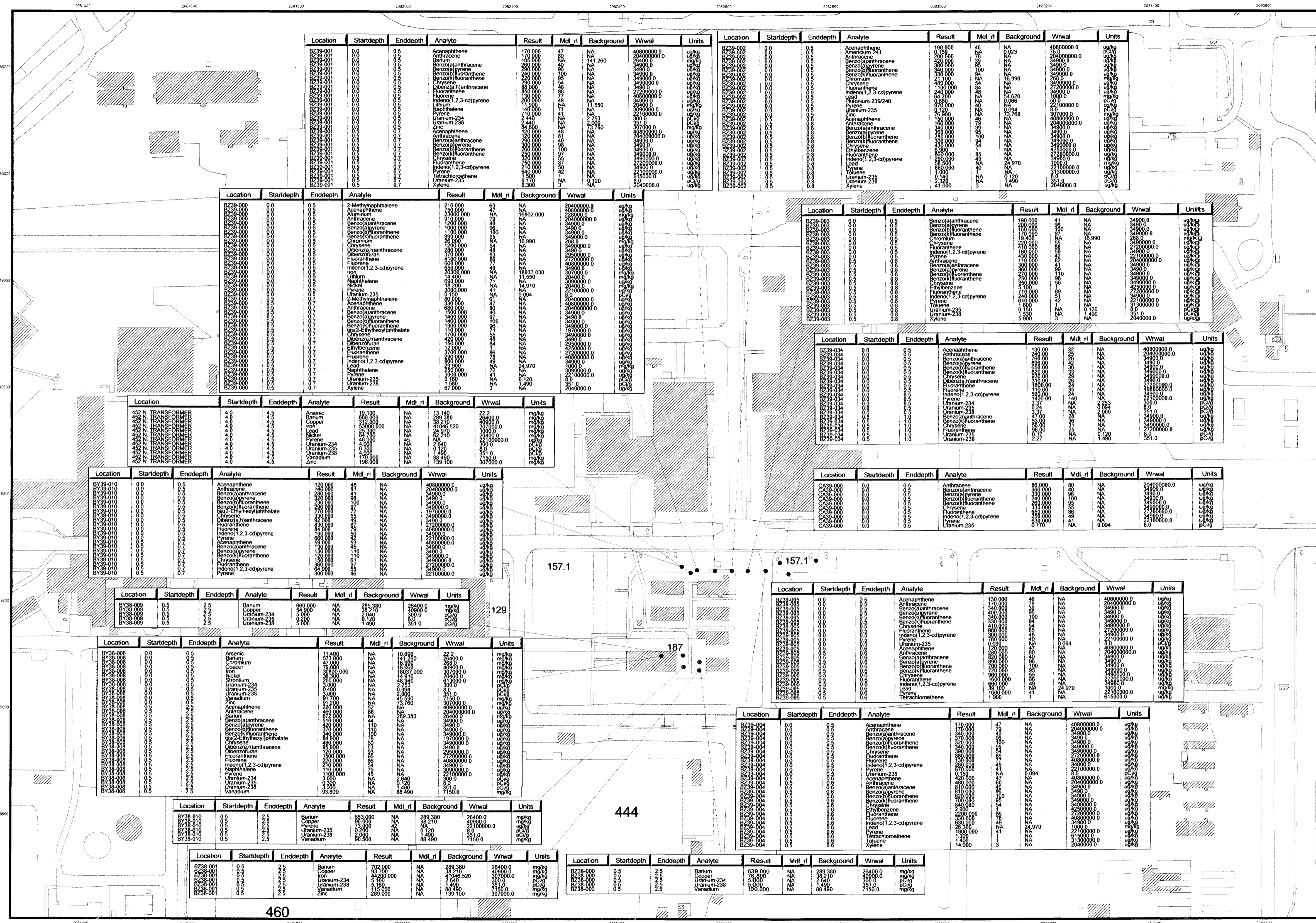


Figure 11  
Residual Contamination in Surface  
and Subsurface Soil,  
North-Central Portion  
of IHSS Group 400-7

KEY

- Sampling location with concentration greater than WRW AL
- Sampling location with concentrations less than WRW AL

- ▬ Paved road
- IHSS
- ▨ Demolished building
- Standing building



Scale = 1: 1000  
100 0 100 Feet

State Plane Coordinate Projection  
Colorado Central Zone  
Datum: NAD 27

U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Date: 12.28.2004

Prepared by:



Prepared for:





Figure 13  
Residual Contamination in Surface  
and Subsurface Soil, Southwestern  
Portion of IHSS Group 400-7

